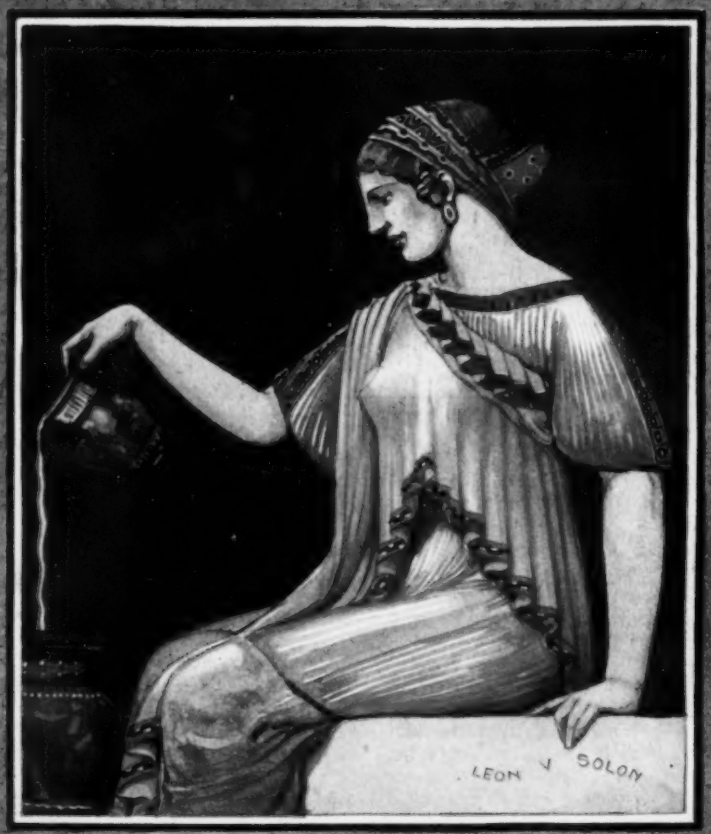
The ARCHITECTURAL RECORD

JUNE 1922



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University Hall, Harvard University, Cambridge, Mass.

After a design by Bulfinch

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PLATE VI

"The introduction of Herakles to Olympus" Pediment Sculpture from an early unnamed Temple on the Akropolis. The reconstruction by Rudolph Heberdey.

WEST GABLE OF
THE TEMPLE OF ZEUS, OLYMPIA.

ARCHITECTVRAL POLYCHROMY

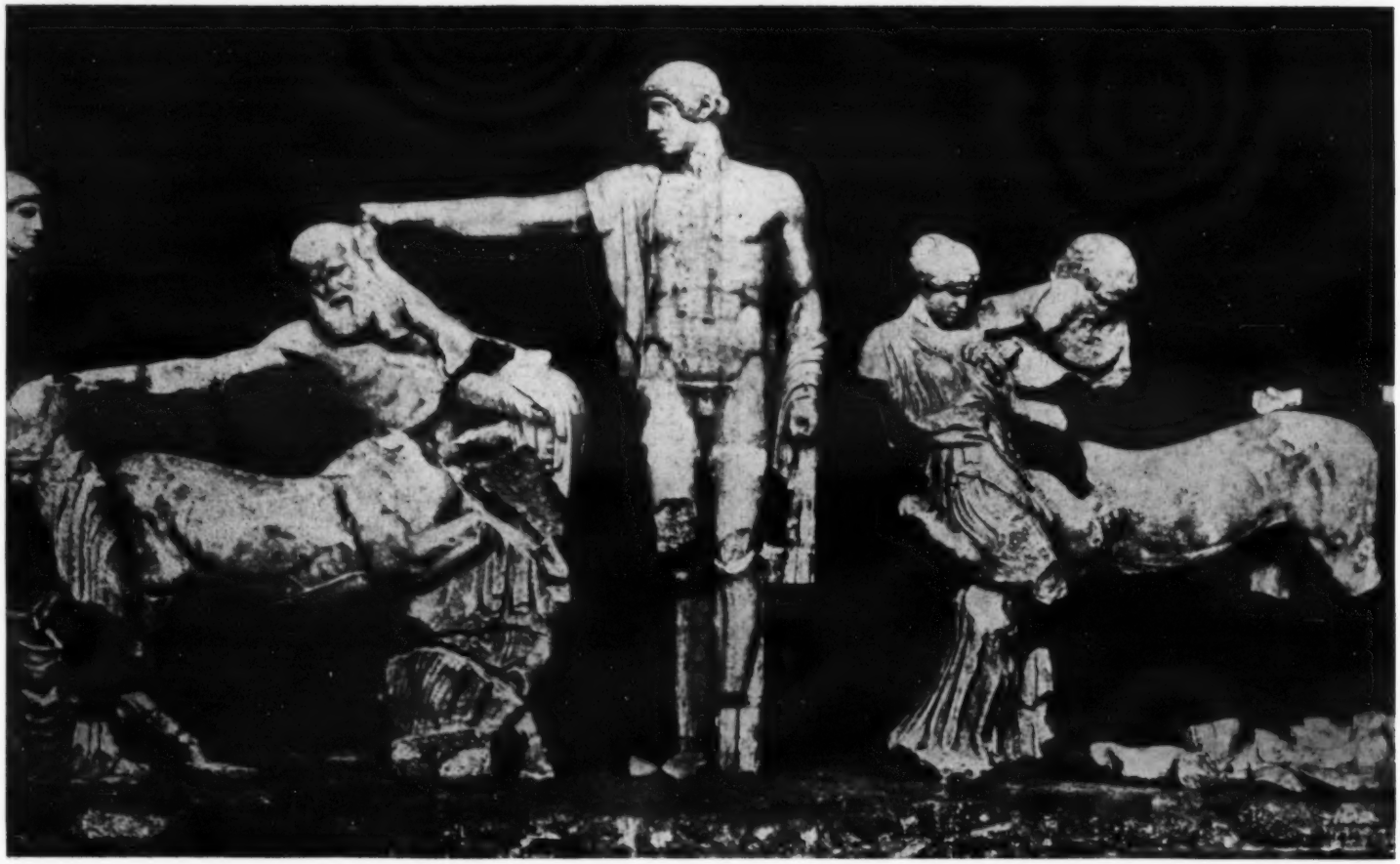
BY LEON V. SOLON

PART VI

Polychrome Treatment of Architectural Sculpture

THE subjection of Greek aesthetic initiative to arbitrary ruling, is not the aim of this brief and elementary treatise; it attempts merely to formulate general principles which may assure safe procedure in the practice of architectural polychromy. In choosing examples that demonstrate the application of theories formulated, Greek architecture exclusively has been drawn upon; for the reason previously proffered, that it alone furnishes solutions to the major problems. The Greeks were the only race that apparently systematically controlled the vagaries of color activity to architectonic requirements. Far from wishing to discipline the Greeks, an inadequate attempt is made to recognize their mastery in architectural polychromy, in that spirit in which their preëminence is universally conceded in architecture and sculpture. They have left corroborative evidence proving that in this aesthetic activity they were craftsmen of the highest order. Their intuitive and precise appraisal of relative values in all factors of effect, both physical and aesthetic, enabled them to assure results of artistic quality even with media of the most erratic nature.

With the introduction of color in an architectural scheme, conditions arise which must of necessity be anticipated and controlled; these proceed chiefly from properties of an active character which are inherent in color. In attempting to develop decorative methods and procedure, it is essential that certain color phenomena be recognized, and their architectonic reactions recorded. In the contemplation of a work of art, it is not possible to experience the full content of intellectual enjoyment, if certain elementary physical laws are therein disregarded. Consequently, in the study of architectural polychromy, this consideration of color phenomena is imperative if practice is to be developed upon a logical foundation. The importance of recognizing certain natural laws, as a fundamental necessity for the realization of beauty in the arts, is self-apparent; it entails no jeopardy of those artistic prerogatives so fiercely upheld by the superficial critic. Were we to see a sculptured figure in which the laws of gravity or poise had been ignored, our predominant feeling must be one of intense regret, whatever its technical excellence. The same feeling would overwhelm us before a painting in which brilliant artistry declares its independence in defiance of the laws of optics. As the majority of architects in our day do not possess the abnormal aesthetic intuition of the early Greeks, it is necessary to construct little rafts of precept on which to embark, when venturing upon uncharted waters in artistic practice. With a comprehension of color activity in architecture, such as the Greeks obviously possessed, it was as impossible



REARRANGEMENT OF WESTERN PEDIMENT GROUP — TEMPLE OF ZEUS, OLYMPIA.

for them to do irresponsible things with pigment, as it would have been to carve a figure out of plumb. When artistic intuition is rare, rather than general, safety is found in basic principles.

As sculpture will, in all probability, play an important part in the future development of architectural polychromy in this country, a few brief descriptions will not be out of place in concluding this treatise, giving a general idea of the manner in which the color treatment of Greek architectural sculpture conformed to the polychromy of the structure it adorned. Though the number of surviving examples in full polychrome is unfortunately nil, owing to the disintegration of pigments upon standing structures, it is, nevertheless, possible to realize a fairly definite impression from the reconstruction of exhumed fragments of the combined effect of sculpture and architecture adorned with color, during that period in which architectural polychromy was developed to its maximum.

In reviewing the various progressive stages of Greek sculptural expression, with the aim to establish some connection between plastic quality and polychrome treatment, a definite relation is very apparent. In the earlier phases of Greek sculptural expression, the decorative spirit was the main actuating impulse; during that period color is a major factor in effect. With the advent of the maturer phases of art-expression during the fourth century, beauty in the human form came to be visualized from the individualistic angle, rather than from the impersonal or decorative. In the sixth and fifth centuries color was not a medium for simulating an illusion of life; it was used to augment decorative quality. When that quality as an aesthetic objective was superseded in the process of artistic evolution, the necessity for color in its original function naturally decreased.

FIG. A. POLYCHROME FIGURE, AKROPOLIS MUSEUM.

The examples which we reproduce are of the VI and V centuries B. C.; these have a more direct relation to our subject than those of the later period. The colors found upon sculptures of those centuries are identical with those found upon contemporary architecture; the component elements of the palette have already been enumerated. There was no apparent desire to make the coloring of detail correspond to normal tones in the figures of the pediment groups or metopes. The decorative balance and distribution of colors throughout the group was apparently a consideration of far greater importance

than realistic effect. Dark blue is found decorating the hair and beard of figures in prominent positions, though black and brown appear on other details in the composition; the iris of the eye is often painted red. The pediment group was primarily a decorative filling of an architectural space, necessarily subordinate in effect to the treatment of its structural setting; the treatment of its architectural surroundings was regulated by considerations entirely foreign to any that actuated the sculptor. The decorative function of the pediment sculpture was to impart a specific ornamental value, or interest, to an architectural unit of secondary structural importance.

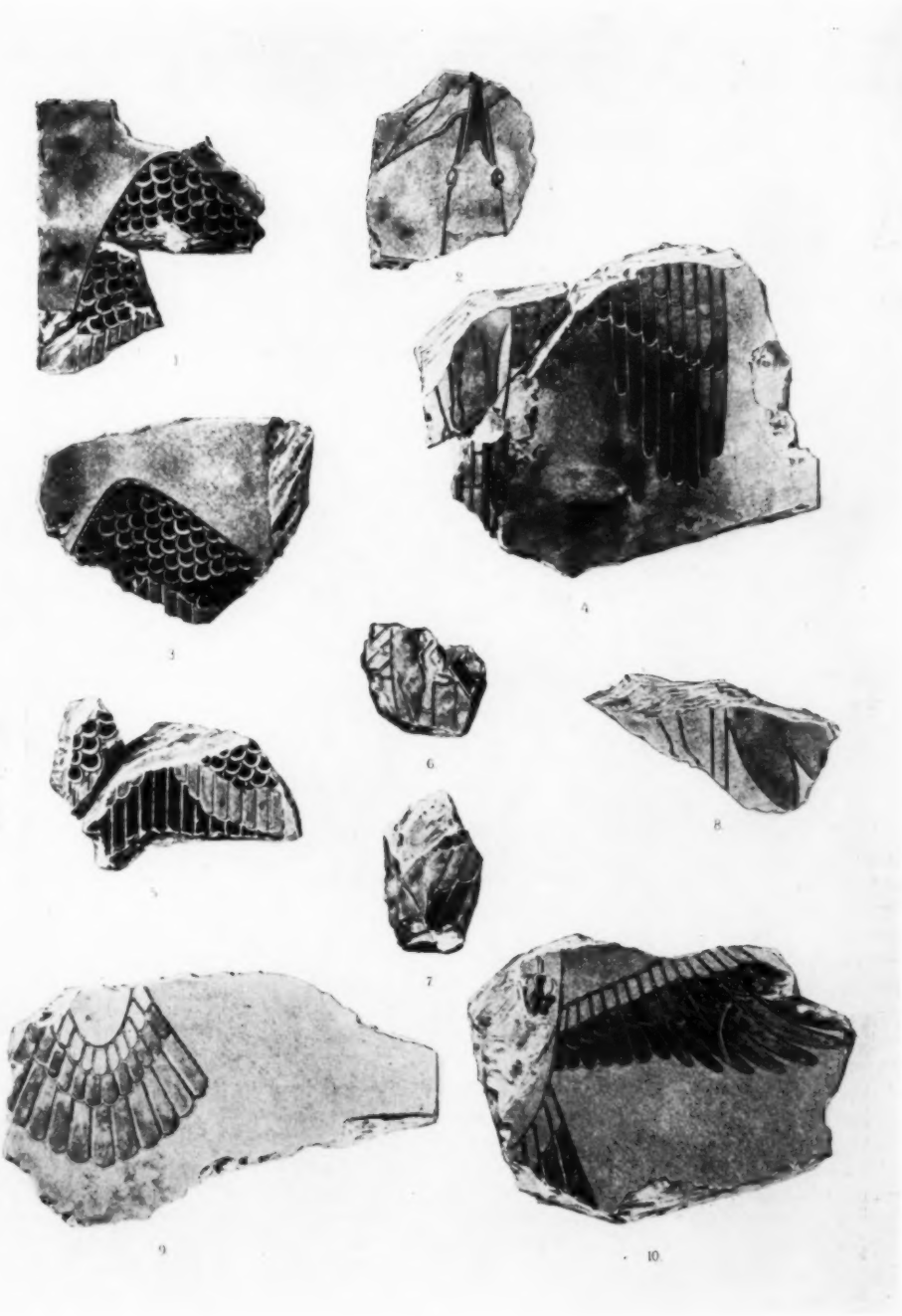
FIG. 276. — Tête polychrome d'Athena Parthénos, trouvée à Rome. (Musée de Berlin.)
D'après les *Antike Denkmäler*, I, 1886, pl. 3.

POLYCHROME HEAD OF ATHENA PARTHENOS.

Historical data, and the evidence of examples, point to the coloring and painting of sculpture being done by men who practiced that craft independently of sculpture. It is probable that this work was done by the same men who colored the building, and that the traditions of the craft, which played so important a part in architectural polychromy, influenced to a great extent the sculpture coloring. The same methods of color application and tone development, are found upon the sculptures which were practiced upon architectural detail. Patterns upon draperies or accessories are often slightly countersunk, with surfaces convexly or concavely treated, where tone quality was desirable. The necessity for color separation and color alternation was anticipated in the carving of detail by the sculptor, who, being surrounded by a host of polychromy examples, readily appreciated the importance of such methods to the ultimate effect. There is no evidence of any divergence of view in color technique between the sculptor and the builder during the full polychrome period; architectural quality decided questions of color technique, to which sculpture in its contributory capacity conformed.

COLORING OF PEDIMENT SCULPTURES.

On page 95, Part II, Weigand's reconstruction of one of the temples of the Akropolis is reproduced. The colors were brilliant, and apparently in their original intensity when first brought to light; but, in a comparatively short time a rapid disintegration took place through exposure to the atmosphere, the blues changed to greens and the other tones lost much of their brightness. Collignon's description of the Typhon is as follows: "Flesh, reddish tone; globe of the eyes yellow, iris green, with a hole in the centre filled with black; black outlines to the eyebrows and eyelids; hair and beard bright blue at the time of excavation, now green; circle of brown round nipples. The colors decorating the triple tail of the serpent are arranged in stripes, one red between two



DETAILS OF SEA-BIRD DECORATION ON THE CORNICE SOFFIT OF AN AKROPOLIS TEMPLE.

FIG. B. POLYCHROME FIGURE, AKROPOLIS MUSEUM.

FIG. C. POLYCHROME FIGURE, AKROPOLIS MUSEUM.

FIG. D. POLYCHROME FIGURE, AKROPOLIS MUSEUM.

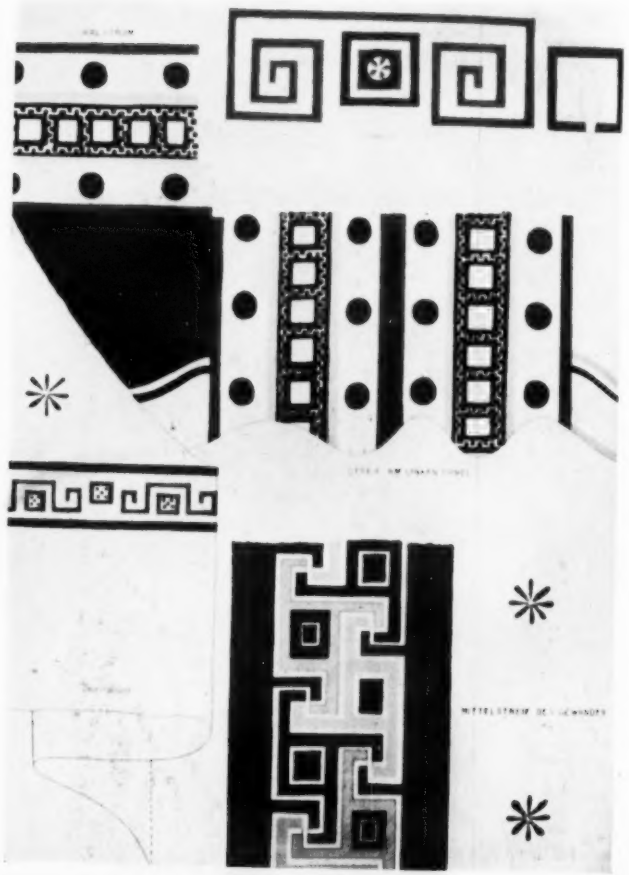


FIG. A. DRAPERY ORNAMENTATION.
Reconstituted by Dr. W. Lerman

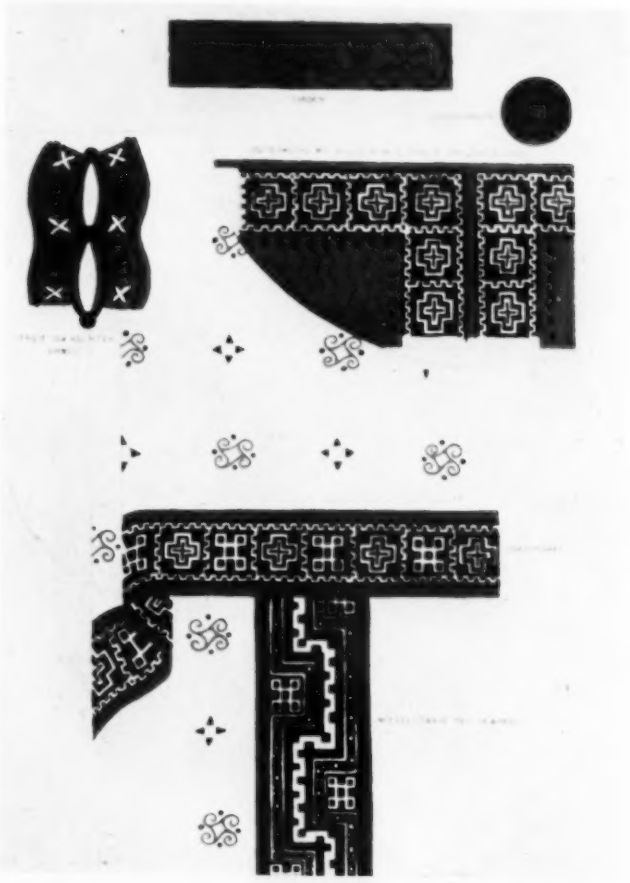


FIG. B. DRAPERY ORNAMENTATION.
Reconstituted by Dr. W. Lerman

FIG. C. DRAPERY DETAIL.
Reconstituted by Dr. W. Lerman

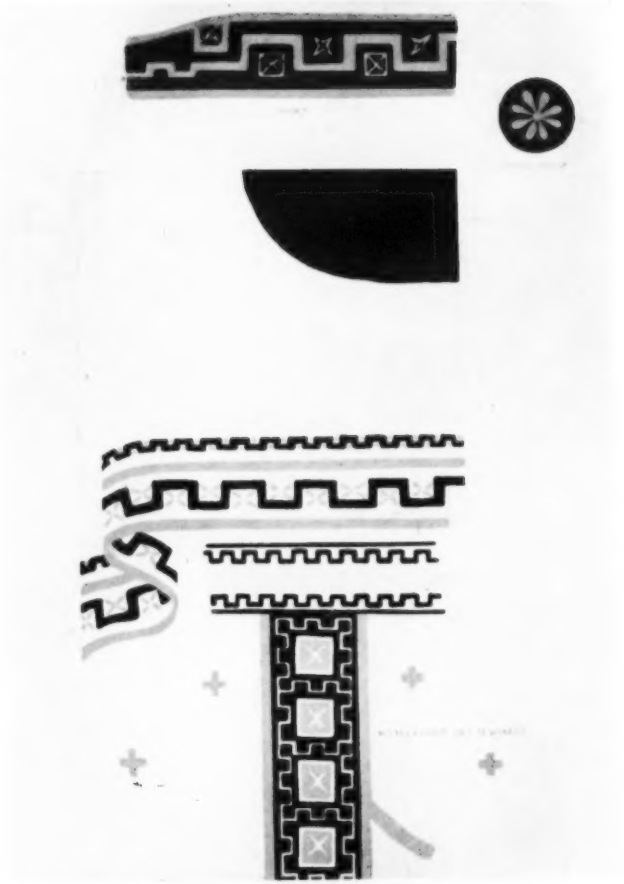
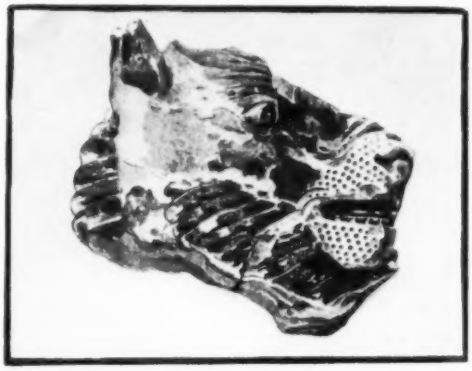


FIG. D. DRAPERY DETAIL.
Reconstituted by Dr. W. Lerman

DETAIL—TYPHON GROUP (WIEGAND).

blue. Red and blue in alternation on the wing feathers of the Typhon, and on the scales of the triton." The detail drawing of the scales illustrated shows the manner in which the carving was treated for coloring. A beautiful motif of birds in flight, on the soffit, flying outwards with fish in their bills, is treated with incised lines without any relief; repeating detail in the wing feathers is colored with red and blue in alternation.



BULL'S HEAD WITH POLYCHROME TREATMENT.

The metope subjects were silhouetted upon a light red or blue background; this practice may have contributed in some measure to that perfection of decorative balance realized in so many examples.

The knowledge that any weakness in composition would necessarily be accentuated, when silhouetted upon a ground of color, must have provided an additional critical angle of considerable value to the sculptor. The active decorative relation of background to subject assumes a greater importance in Greek decorative composition than it apparently does in any other form of racial art expression. The same spirit actuates the composition of the metope subjects upon their colored grounds, which reveals itself in the Greek vase friezes; with its colored ground, the metope composition involved the same aesthetic problems in figure grouping which confronted the Greek vase painter.

POLYCHROME HEAD FROM THE TYPHON PEDIMENT GROUP.

Definite knowledge as to the massing of the colors upon the pediment group must be a matter of conjecture for the present. The variety of figure arrangements which archaeologists evolve with the same figures and fragments, have not conclusively determined the precise nature of the original groupings, even upon temples as thoroughly studied as those of Aegina and Olympia. The rich polychrome moulding which followed the angle of the roof on the upper edges of the pediment, was undoubtedly a valuable connecting link for the various masses of color distributed over the figures; its practical value in this respect can be appreciated by referring to Plate VI.

THE POLYCYHROME ORNAMENTATION OF DRAPERY.

Data of considerable interest have been accumulated by Dr. Wilhelm Lerman upon this subject. He has prosecuted a diligent research, reconstructing

the color treatment of draped figures of the VI and V centuries. Many of these are now gathered together in the Akropolis Museum. Our illustration of drapery decorations are taken from his work, "Altariechische Plastik." The same observation is recorded with regard to the disintegration and fading of colors on exposure, which is referred to in connection with the Typhon group. In Dr. Lerman's color plates green figures prominently. Collignon remarks the absence of green on some of these examples at the time of excavation. The type of ornamentation in many examples is distinctive, insofar as the use of the fret detail is concerned. Judging by the designs, one might assume them to be literal transcriptions of the woven patterns of the period, as they are decidedly suggestive of the loom. The ornamentation is often slightly countersunk to receive the color; this must have been of great assistance in reconstituting the patterns. The colors shown in Dr. Lerman's plates are two blues, red and green only. In some examples the chiton is shown with a solid color, dark blue, red or green.

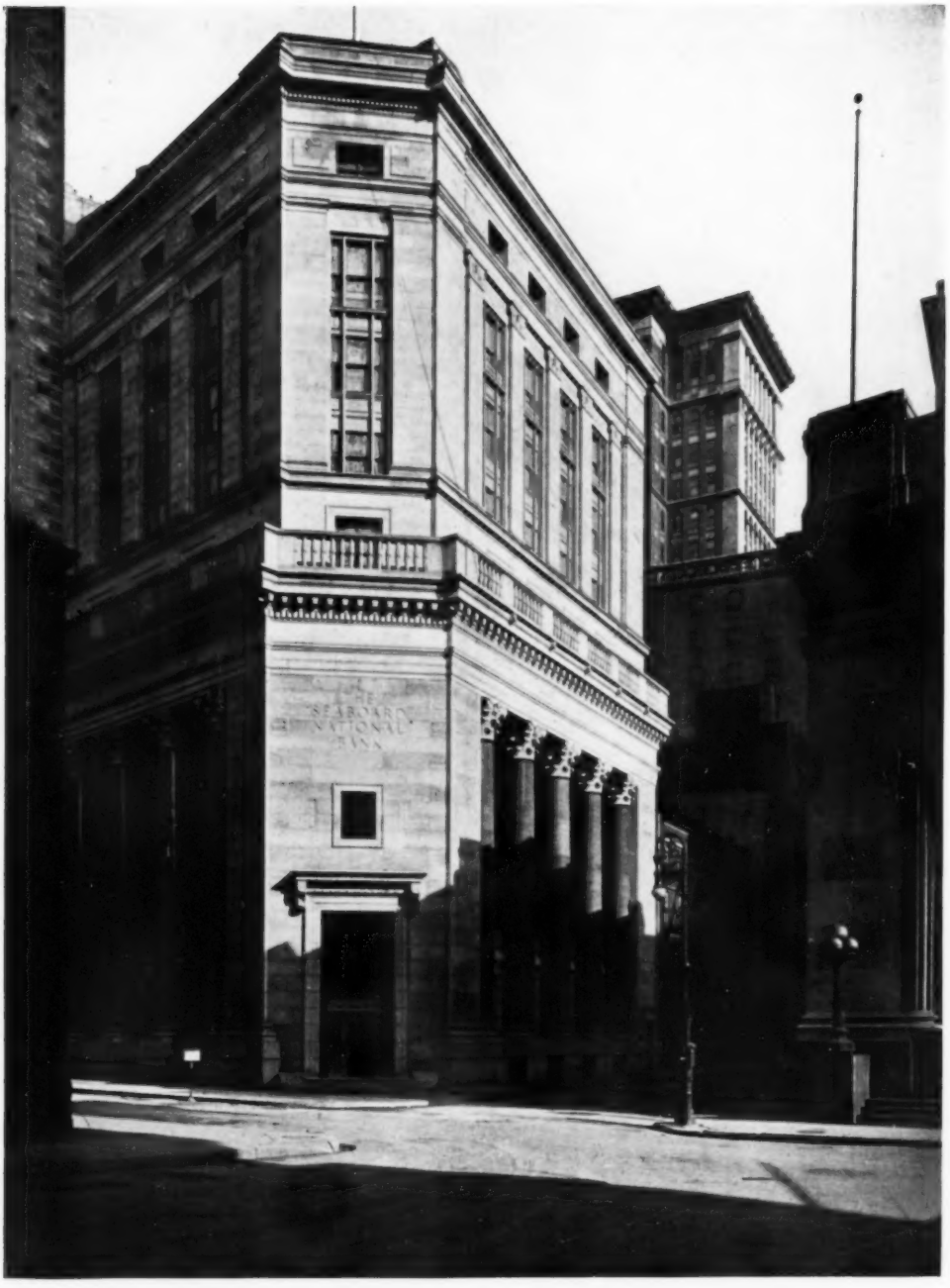
Additional data of the greatest interest will be found in Rudolph Heberdey's "Altattische Poroskulpture," from which work Plate VI was copied.

CONCLUSION.

The difficulties encountered in writing this elementary treatise were considerably augmented by the total absence of text books or monographs upon architectural polychromy. Archaeologists have accumulated precise descriptions of examples and have rewritten valuable history; but the effect-value of their discoveries in architectural composition belongs naturally to another order of research: the practical utility of the latter type of investigation endows it with an unusual fascination. In treating of the relation between color activity and its decorative function in architecture, colored examples are essential to elucidate hypotheses stated. In a publication of this character the majority of the examples must be presented in black and white; that measure of conviction which is so easily acquired from actual specimens, or from elaborately colored plates, is less promptly recorded with a single color print. Those who doubt the practical value of the Greek methods may easily test this by divergence in practice.

The initial and most serious difficulties which are encountered when experimenting with colors, are disposed of in Greek practice; by adopting their methods we will avoid much tedious and discouraging experimentation. The manner in which they neutralize discord, and develop tone interest in a flat tone, is so simple that it might easily be overlooked by the student who tends to assume that the solution to an intricate problem must necessarily be of an involved nature.

The plan of this treatise has been to recognize active color phenomena, and to draw practical deductions, applying these to architectural polychromy. It is impossible to ignore the important function of systematic deduction as a fundamental in the arts. The greatest examples of the arts show no evidence of that peculiar form of imaginative license which the uninitiated so frequently claim to be the habit of genius; why should we expect it to actuate a purely contributory and subordinate activity, such as architectural polychromy? The direction of all forms of artistic activity is determined by aesthetic laws—a code which we recognize under the popular designation of "Taste." Art expression is primarily feeling; but that feeling is controlled by a specific form of intuition, which in turn is subject to the aesthetic code. An intense admiration, resulting from a lifelong study of Greek art, doubtless generated the author's conviction that the solution of architectural color problems would be found in their artistic annals; it is to be hoped that some readers may share this belief. The late Sir William Osler, in addressing the Oxford Classical Association in 1919, said: "The name of Hellas no longer stands for the name of a race, but as the name for Knowledge; or, as more tersely put by Maine, 'Except the blind forces of Nature, nothing moves in this world that is not Greek in origin.'"



SEABOARD NATIONAL BANK, NEW YORK CITY. ALFRED C. BOSSOM, ARCHITECT.

DIRECTORS' ROOM.

The SEABOARD NATIONAL BANK NEW YORK CITY

ALFRED C BOSSOM, ARCHITECT

By
Matlack Price

IN this day of change or transition in many long-familiar things, one fixed point in the realm of architecture seems, without argument, to be the bank. Through a great many years its ideal—dignity—has remained unchanged, and the expression of this ideal has found its outward architectural form in the Classic, ranging from Doric severity through Ionic urbanity to the efflorescence of the Corinthian.

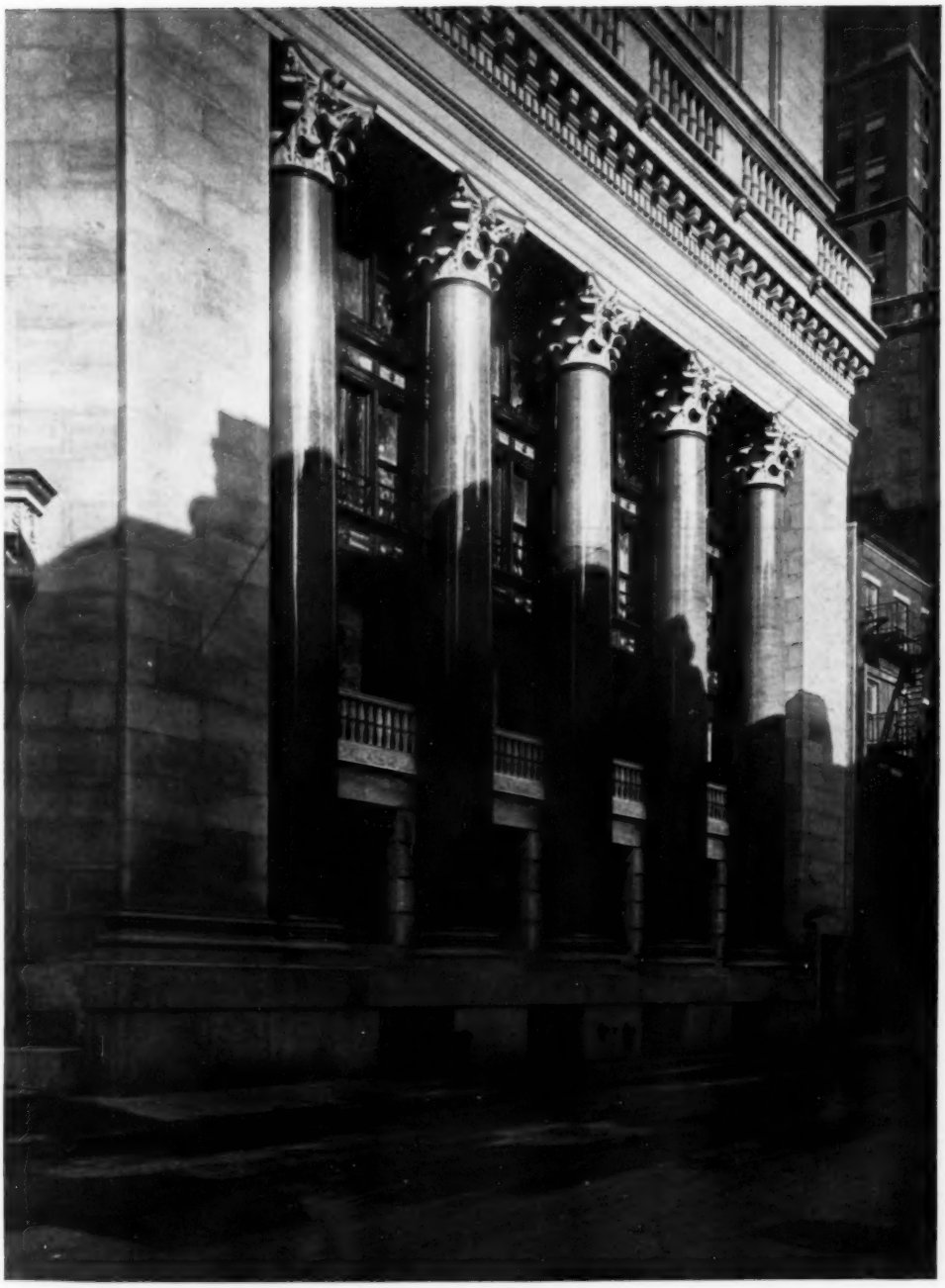
It is true that some of the more recent designs for bank buildings, the work of architects of more than average judgment, are establishing the style of Renaissance Italy as fitting guise for the bank. Here, though, is a variation in manner rather than in substance, because the architecture of Renaissance Italy is essentially a sophisticated development of Classic architecture.

Certain adventurous architectural ex-

cursions in bank architecture, as, for instance, Louis Sullivan's People's Savings and Loan Association, at Sidney, Ohio, have not in any way affected the general rendering of the bank. While architectural radicals may (and probably do) select the bank as a perfect example of the reactionary stupidity of the architecture of this country, I should think that not a few timid depositors, especially the rural element, would look with considerable misgiving upon a building purporting to house an honest, decent banking institution, but looking as to its outside, so tremendously like a Temple of the Shriners, or a college secret society building.

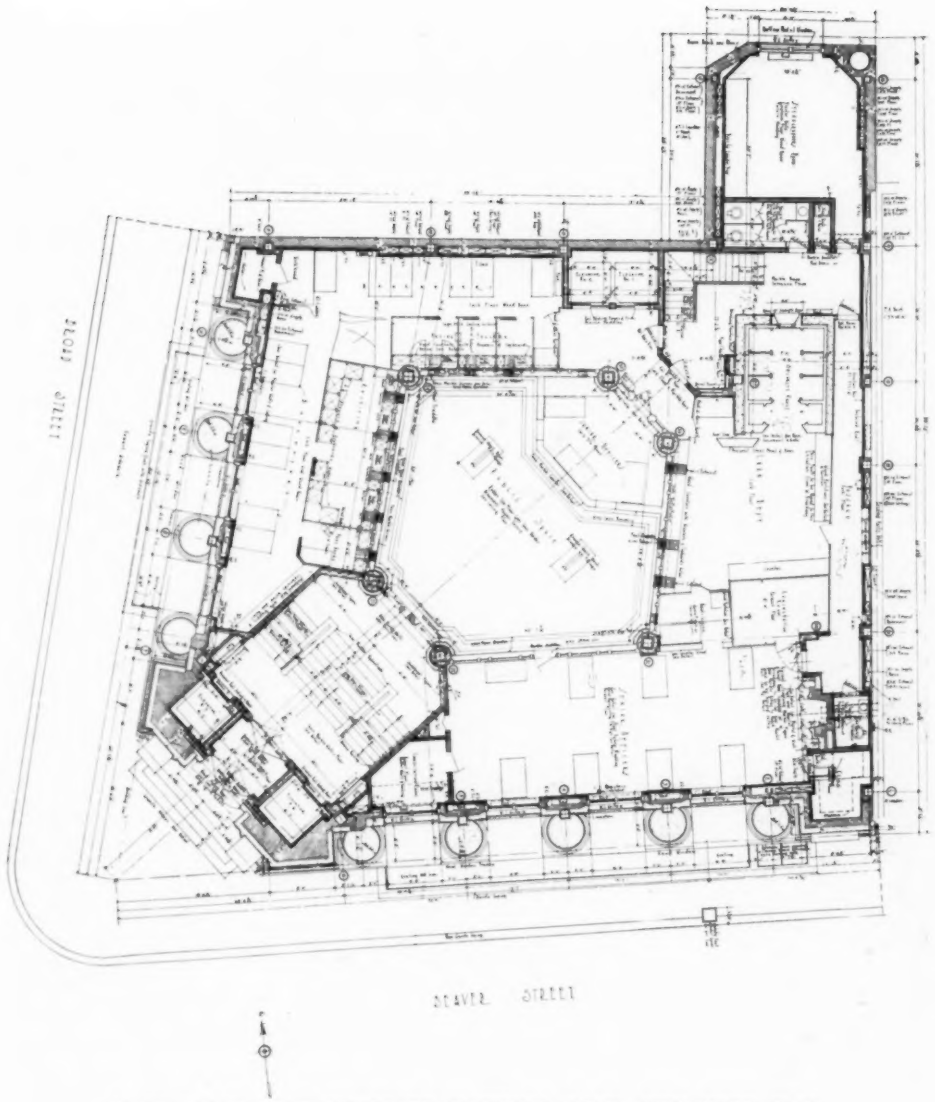
Because of the business necessity of a respectable, conventional and conservative appearance, it is probable that the bank will be one of the last types of building to undergo any marked change in architectural treatment. None but the radical-minded will deplore this, because the art and civilization of the ages have evolved no more beautiful example of logical and perfectly organized design than the architectural manner of the ancient Greeks and their heirs of Rome and of Renaissance Italy.

OFFICERS' SPACE, WITH FIREPLACE GROUP BY KARL BITTER, SEABOARD NATIONAL BANK, NEW YORK CITY.
Alfred C. Bossom, Architect.



LOWER PORTION OF BEAVER STREET FAÇADE, SEABOARD NATIONAL BANK, NEW YORK CITY. ALFRED C. BOSSOM, ARCHITECT.

MAIN ENTRANCE DOOR, SEABOARD NATIONAL BANK,
NEW YORK CITY. ALFRED C. BOSSOM, ARCHITECT.

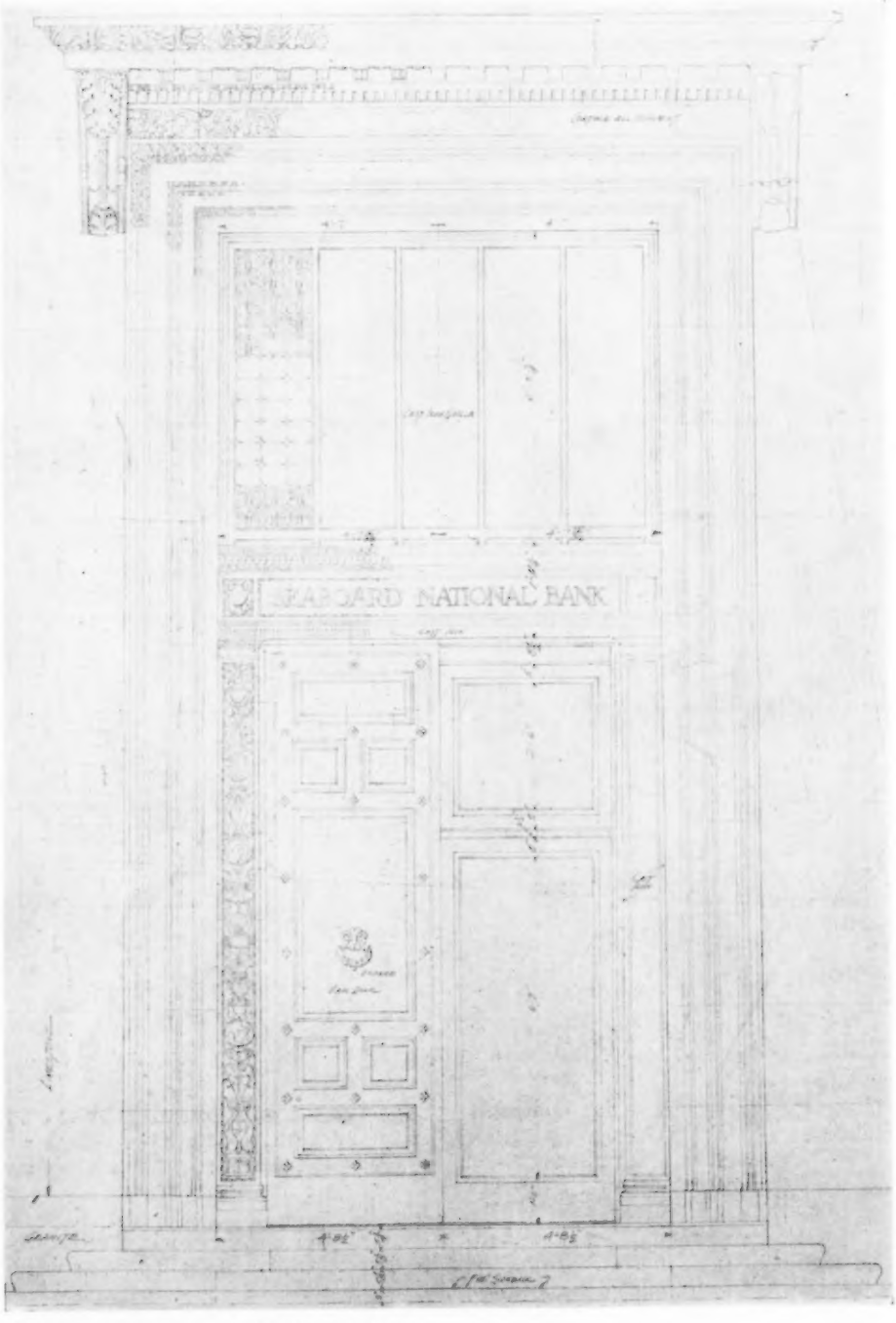


MAIN FLOOR PLAN, SEABOARD NATIONAL BANK, NEW YORK CITY.
Alfred C. Bossom, Architect.

The greatest problem which confronts the architect of today in designing a bank building is the achievement of Classic order and symmetry on an awkwardly shaped or a too-small site.

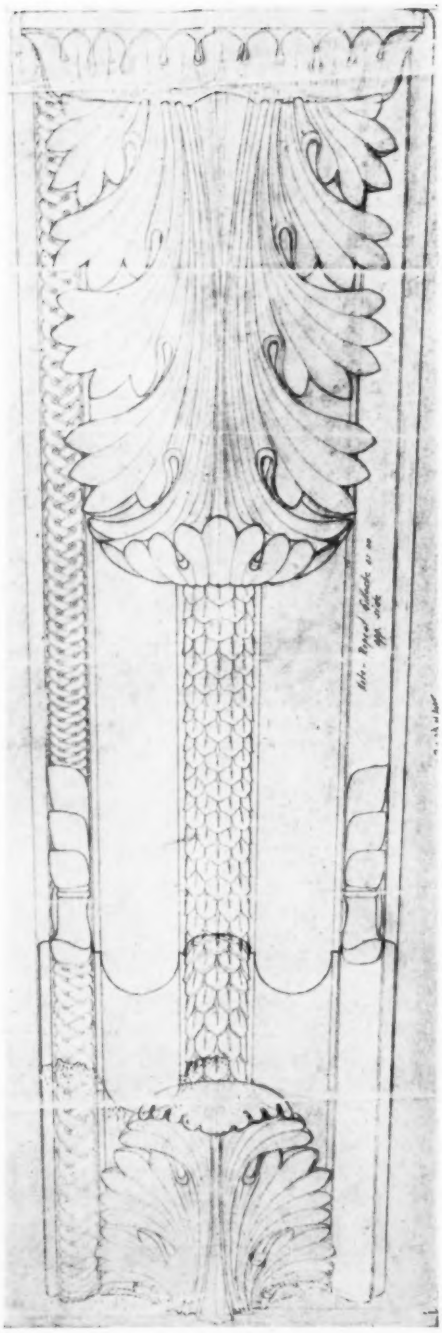
For the new building for the Seaboard National Bank in New York City, Alfred C. Bossom has demonstrated one of those attributes of the architect seldom, if ever, recognized by the lay public—the attribute of resourcefulness. Certainly the architect of to-day must be far more than merely the designer of gracious architectural forms and general effects. He has, it is true, super-experts to aid him in the many special phases of his more complex problems—but these are but aids: the responsibility, as well as the architectural concept remain with the architect.

There are many aspects of such a problem as was involved in this bank

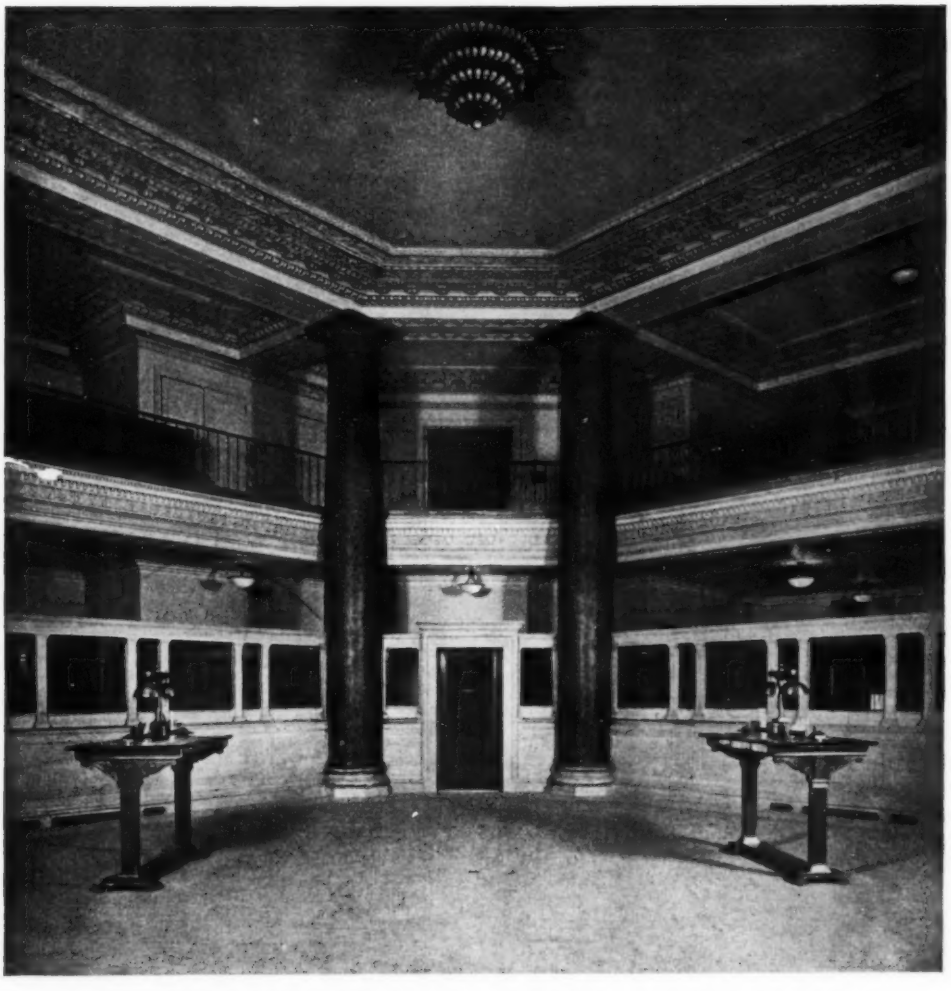


DETAIL STUDY OF ENTRANCE DOOR, SEABOARD NATIONAL BANK, NEW YORK CITY. ALFRED C. BOSSOM ARCHITECT.

DETAIL, SIDE ELEVATION OF CONSOLE FOR MAIN ENTRANCE — SEABOARD NATIONAL BANK, NEW YORK.
Alfred C. Bossom, Architect.



DETAIL, FRONT ELEVATION OF CONSOLE FOR MAIN ENTRANCE — SEABOARD NATIONAL BANK, NEW YORK.
Alfred C. Bossom, Architect.



BANKING ROOM—MAIN FLOOR, SEABOARD NATIONAL BANK, NEW YORK CITY.
Alfred C. Bossom, Architect.

building: Vignola or Vitruvius might well have quailed before them. Construction was a simple matter in their day, but now, although modern inventions and methods have found practical solutions for many one-time impossibilities, modern requirements, on the other hand, have very nearly equalized the balance. The steel framing in the building, illustrated here, was a peculiarly difficult and exacting problem, as a glance at the main floor plan will disclose.

The plan, in conjunction with the several photographs reproduced, will illustrate again that attribute of resourcefulness which must go hand in hand with the architectural vision of the pictorial aspect of the building as a whole.

At the convergence of Broad and Beaver streets, considerably less than a right angle, is placed the entrance, which, set as it is on an assumed diagonal axis, at once cuts off the sharp point which these converging streets would otherwise have formed.

The entrance itself is a dignified but

VIEW OF BANKING ROOM, SEABOARD NATIONAL BANK, NEW YORK CITY.
Alfred C. Bossom, Architect.

by no means frigid classic rendering, and the two street elevations are given their architectural character by tall colonnades of engaged columns, set in flush with the building line.

The entrance gives into a small vestibule, with two elevator shafts left and right, and a stair leading up into the banking space, and down into the basement.

On the main banking floor every inch of space has been carefully planned and utilized. The Broad street side and the side along the north party wall are occupied by space for the bookkeeping department, convenient to the tellers' cages which give on the public space. Directly on the diagonal axis about which the plan is disposed is a railed space for junior officers of the bank, and on the Beaver street side of the building, balancing the Broad street portion of the bookkeeping department, is a large space for the senior officers. Opening from this are several private consultation rooms, and the remainder of the floor space is taken up with the loan department, a large security vault, corridors, lavatories and two additional elevators, with a stenographers' room in a sort of wing running north out of the northeast corner of the plan.

To effect virtual symmetry, together with such exact and diversified partition of space on an irregularly shaped lot, is no mean architectural achievement, and the architect is to be congratulated upon the excellently logical and well-articulated manner in which he has accomplished it.

The detail throughout, conservative in its character, is carried out in an agreeable scale with an appropriate absence of ostentation, and the whole building can safely go on record as an able and pleasing solution of a typically difficult problem in metropolitan bank design.

The BUTTON-CONTROL ELEVATOR IN A NEW TYPE OF MODERATE-PRICE APARTMENT BUILDINGS AT JACKSON HEIGHTS, NEW YORK CITY

Andrew J. Thomas, — Architect

THE button-control, or "push-button," elevator is a device which is simple enough from the point of view of mechanics but which in housing economics plays a distinct rôle. It creates an intermediate class of apartments between the low "walk-up" apartment and the tall "elevator" apartment.

The elevator operated by an employee has made possible the tall buildings of America. The converse is true, namely, that the tall building makes the elevator possible. This is because the expense of running an elevator with two operators—one for the day and the other for the night, as required by law in New York—is too heavy a charge upon rentals unless the elevator serves a large rental area.

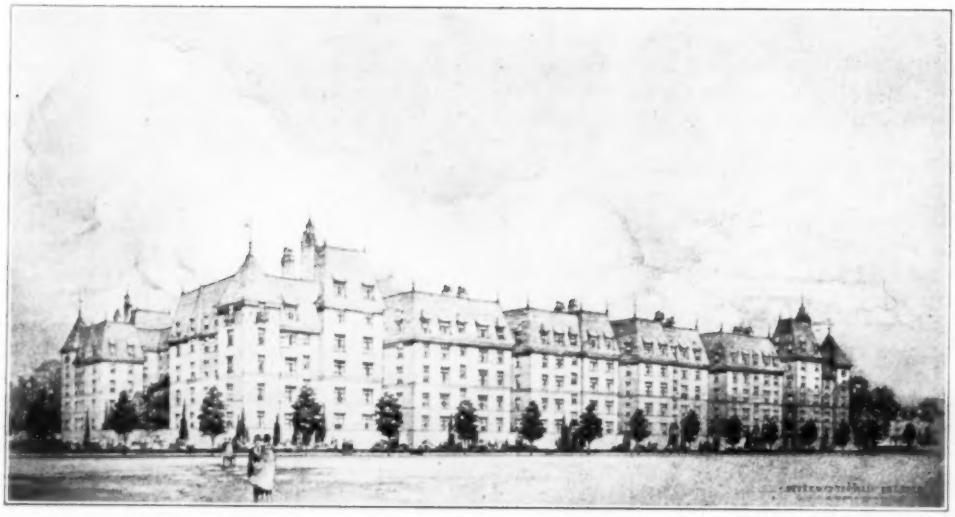
On the other hand, a button-control elevator, costing little to operate, becomes economically possible in a building of five or six stories in height, serving only a few apartments on each floor. In this group of twelve apartment buildings at Jackson Heights there are two apartments, of five, six or seven rooms, to a floor and five floors to the building. The tower in each corner building has six floors. Thus, each floor has only two families—an arrangement which adds to privacy, enhancing the domestic character of the apartments.

The placing of two apartments to a floor permits latitude of treatment in the plan of the block as a whole. It allows openings to be made in the group, dividing it into buildings of not too wide frontage. The frequent openings, which are about nineteen feet six inches wide in the shortest dimension, afford splendid block circulation, increase the number of corner rooms, and allow the bathrooms, kitchens and fire-escapes to be placed at the sides, where they are not conspicuous.

The location of fire-escapes has always been a difficult problem for the architects of New York apartments. Usually, the only solution of the legal requirements has been to put the fire-escapes on the street front, where they are at once an eyesore and an encroachment on the sidewalk. In the group at Jackson Heights, the passageways between the buildings are used alternately for service entrances and for entrances into the garden. In addition, a rear door from the entrance hall of each building gives access from the apartments to the garden, without going outside the building. Altogether, these various arrangements have resulted in a plan which invests the buildings individually with privacy and charm, opens up the group to the fullest extent, admitting light, air and cross ventilation into the building mass; and, most important of all, permits of a splendid garden in the center, along the whole length of the block.

A practical advantage of the plan is the small court in the rear of each building. This gives more exposure to the apartments because it adds corner rooms; but unfortunately the uneven massing of the building walls along the garden detracts from the architectural appearance when viewed from the garden. This is the chief fault of the design.

A further important detail of the plan is to be noted. The bedrooms overlook the garden. We have here one of those changes in custom which real estate men dread. Too often real estate experts, by insisting that a custom is ironclad, deny



GROUPED APARTMENT BUILDINGS FOR THE QUEENSBORO CORPORATION AT JACKSON HEIGHTS, NEW YORK CITY.
Andrew J. Thomas, Architect.

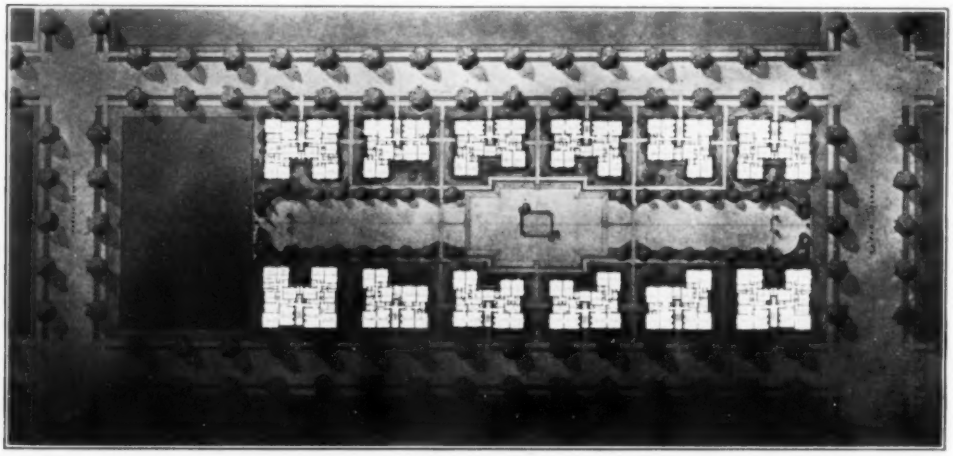
to building design the very characteristic which is the pride of every other industry, namely, progress. Formerly the street was the location chosen for bedrooms in the apartment plan. The reason for this choice was that apartments were badly planned: the rear rooms fronted on a narrow, pocketed court, or else had an outlook against a blank wall of a neighboring building a few feet away, on a side or rear yard. As a result, the custom grew fixed of placing the bedrooms on the front. But, now, since architects have improved apartment planning, bedrooms may have a rear location overlooking a spacious garden. Not only are they quieter in that position, but they have better ventilation.

The garden itself is, of course, the dramatic feature of the design. More than anything else, it proves the intimate relationship between architecture and economics. This relationship has already been explained (see "Garden Apartments in Cities" by John Taylor Boyd, Jr., THE ARCHITECTURAL RECORD, July and August, 1920) and needs no discussion here. One fact, however, should be mentioned: this garden is designed for use, whereas the garden in the first group which Mr. Thomas planned at Jackson Heights, was designed to be looked at. As the earlier garden was an experiment, it was not thought desirable to encourage people to gather in it. Experience has induced the Queensboro Corporation to go further, and this latest garden is definitely a social place, where the people of the apartments are invited to come. The object is obtained in the design by means of a complete system of circulation and by the use of little paved spaces or terraces, where people may sit outdoors.

On the street elevations, the design emphasizes the block as a whole, at the same time preserving the character and individuality and domestic scale of the different buildings. The corner buildings have been emphasized by towers, and thus act as terminating masses for the elevation of the block. These, and the horizontal bandings on the lower stories of the buildings, tie the group together.

The exterior has been kept very simple, relying for effect on a contrast of well-proportioned windows against ample wall space and on a picturesque sloping slate roof. The brick is unusual—a light coppery-colored red, laid in modified Flemish bond, the nine-inch length of the

bricks being a departure from the standard size. The slate of the roof has rough butts and a certain variation in courses and in color, the color consisting of light greenish and yellowish brown shades. The stone doorways, a few hand-wrought iron balconies, the finials, and the crestings of roofs and chimneys, are just enough to give accents to the design. Here, again, this simplicity is a change from the usual apartment house treatment in New York city. To overcome the ugliness caused by the defective placing of fire-escapes on the front, referred to above, architects have resorted to a more



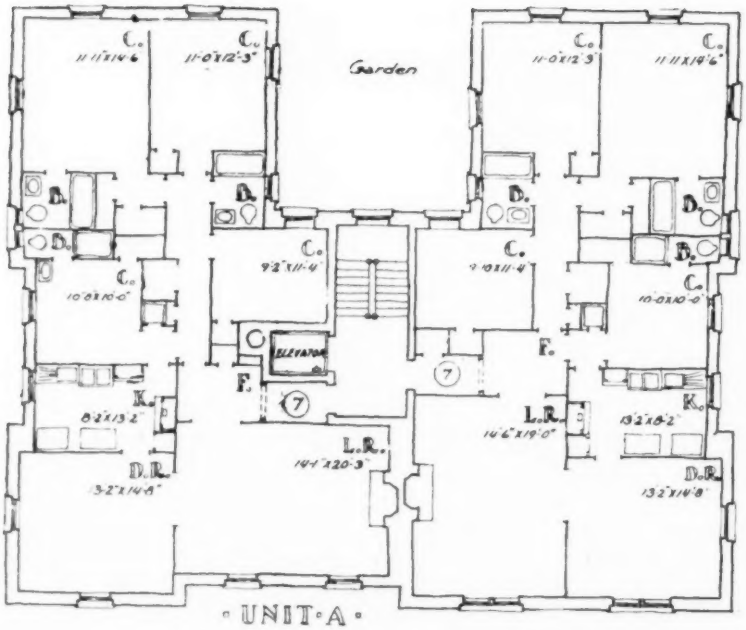
BLOCK PLANS OF GROUPED APARTMENT BUILDINGS FOR THE QUEENSBORO CORPORATION AT JACKSON HEIGHTS, NEW YORK CITY.
Andrew J. Thomas, Architect.

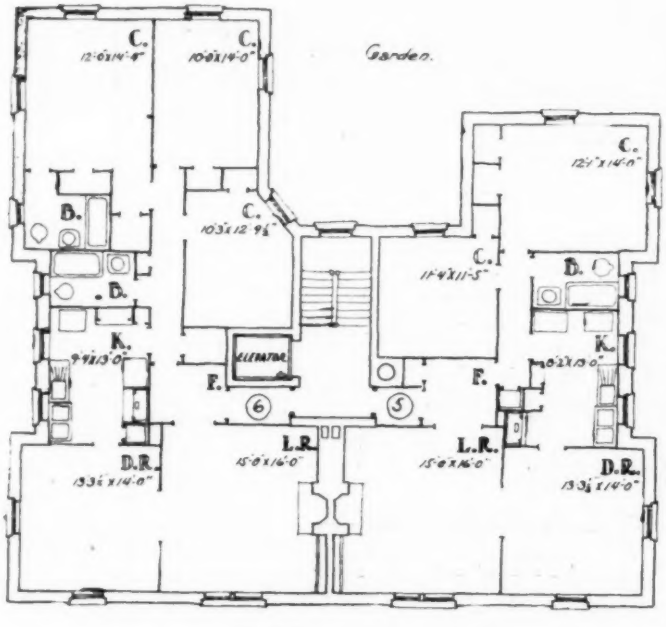
or less gaudy design of entrances, cornices and window enframements, an effect that is rarely successful and always expensive.

It remains to point out that these apartments are financed to be sold on a "tenant-ownership" plan. The tenant-ownership plan seems to be the only means of introducing home ownership for the mass of the population in our great cities. Because of high land values, economic city housing in most cases means apartments, and apartments hitherto have meant tenantry. This condition in turn has reacted unfavorably upon the architecture of lower-priced apartments; a system of speculation has grown up whereby badly designed and constructed apartment buildings were run up and unloaded upon uninformed investors before their defects became evident. But, with tenant-ownership, permanency enters into the problem, and the cost of inefficient design and the maintenance cost of poor construction and of waste space must be reduced. Tenant-ownership means better architecture.

In the technical language of finance, each building at Jackson Heights is a separate corporation, and the tenants of each building own the land and building in which they live. The Queensboro Corporation manages the buildings for the tenants, an arrangement which insures responsible and economical operation. A partial payment plan has been devised by which the purchaser may make an initial payment and liquidate his indebtedness by monthly payments of approximately the rental value of the apartment. From each monthly payment the proportionate share of the operating cost is taken and the rest applied toward the payment of interest and principal. References are required of each purchaser, and care is taken that the tenant is responsible and will be a desirable neighbor.

There is but one mortgage on each building, held by such institutions as the

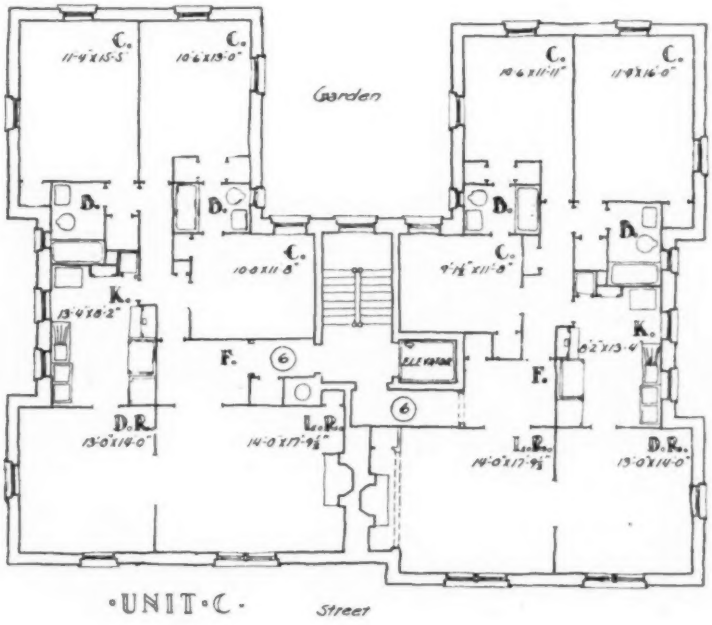

Garden
C.
D.
K.
F.
ELEVATOR
L.R.
D.R.
UNIT A

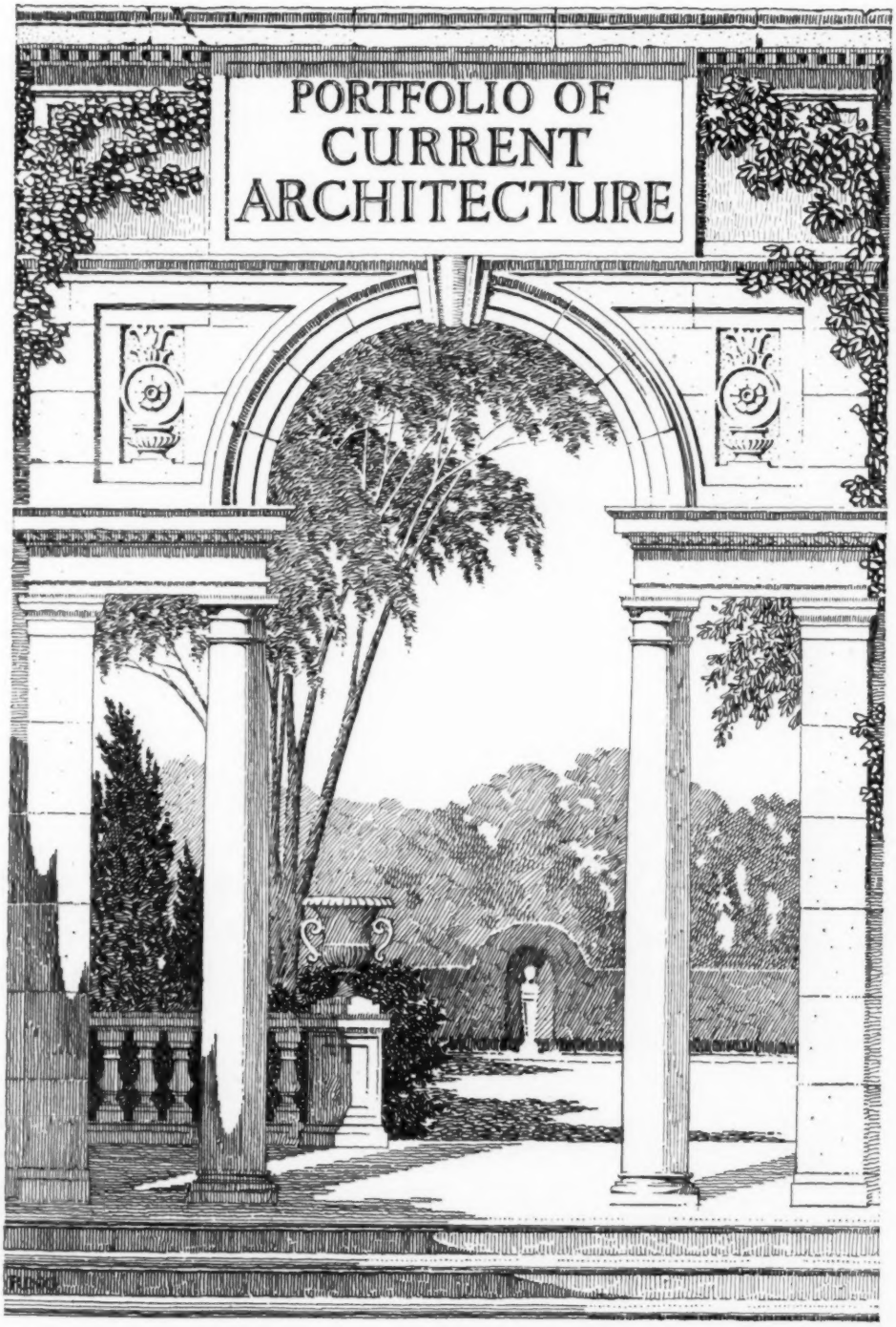

Garden.
C.
D.
K.
F.
ELEVATOR
L.R.
D.R.
UNIT B
Street

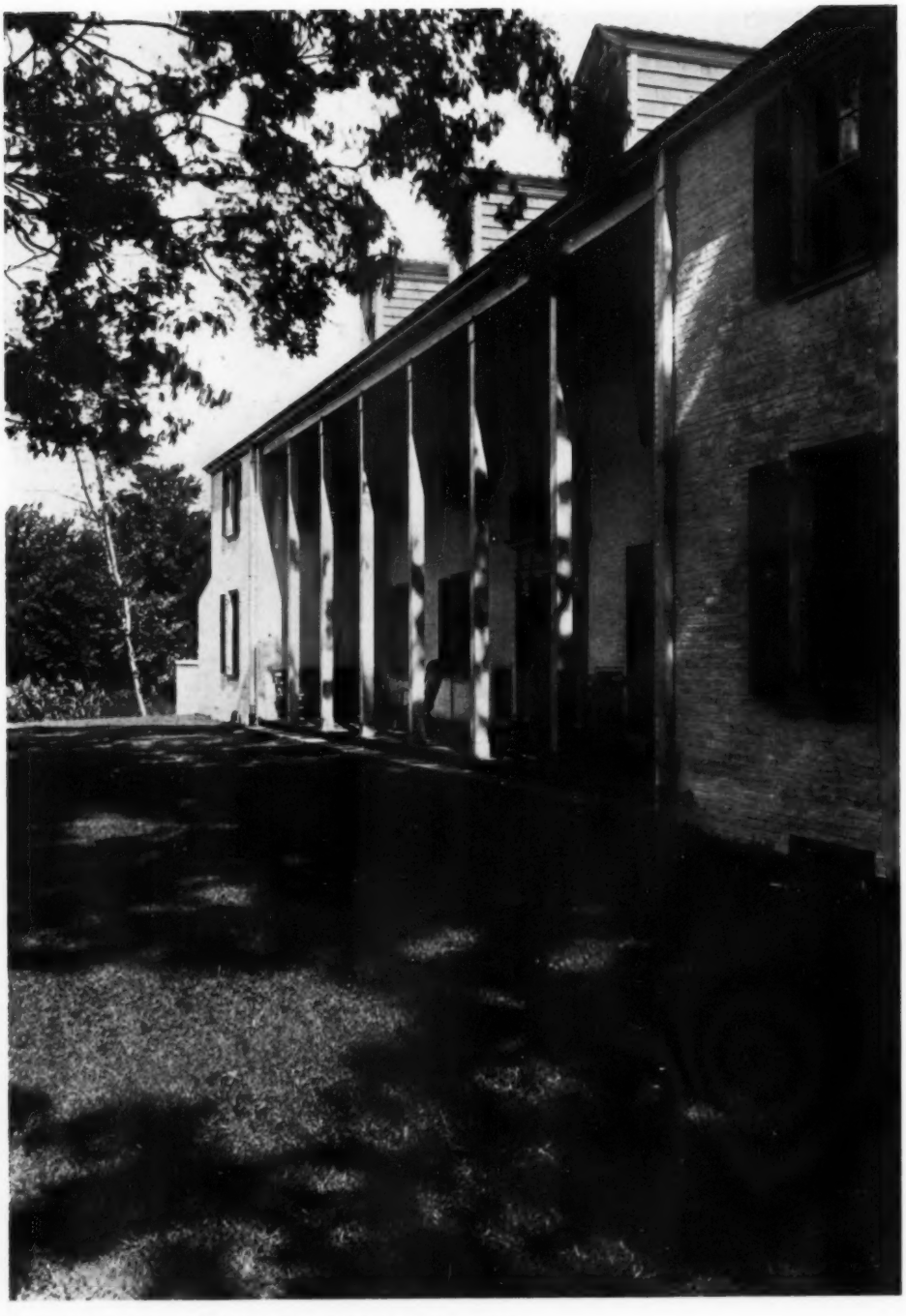
Metropolitan Life Insurance Company, the Prudential Life, or the Long Island City Savings Bank. The mortgages are amortized from the monthly payments. Should the purchaser of an apartment be obliged to leave the city, a Resale and Rental Department aids him in disposing of his stock. The apartment will be rented for him or will be offered for sale.

The broader advantages of this plan are evident. It insures that security of value and that reasonable opportunity of resale without loss, in case the owner is compelled to move, which alone allows home ownership to compete with renting in the unstable conditions of modern industrial society. It should be added that the legal structure of incorporation is important in a tenant-ownership plan. The rights of the majority and of the minority ownership are carefully protected; authority is given for financial dealings, such as renewing mortgages, etc.; and, finally, means are provided for dispossessing people who turn out to be disreputable, just as tenants may be dispossessed. Ownership of stock does not imply unqualified ownership of an apartment.

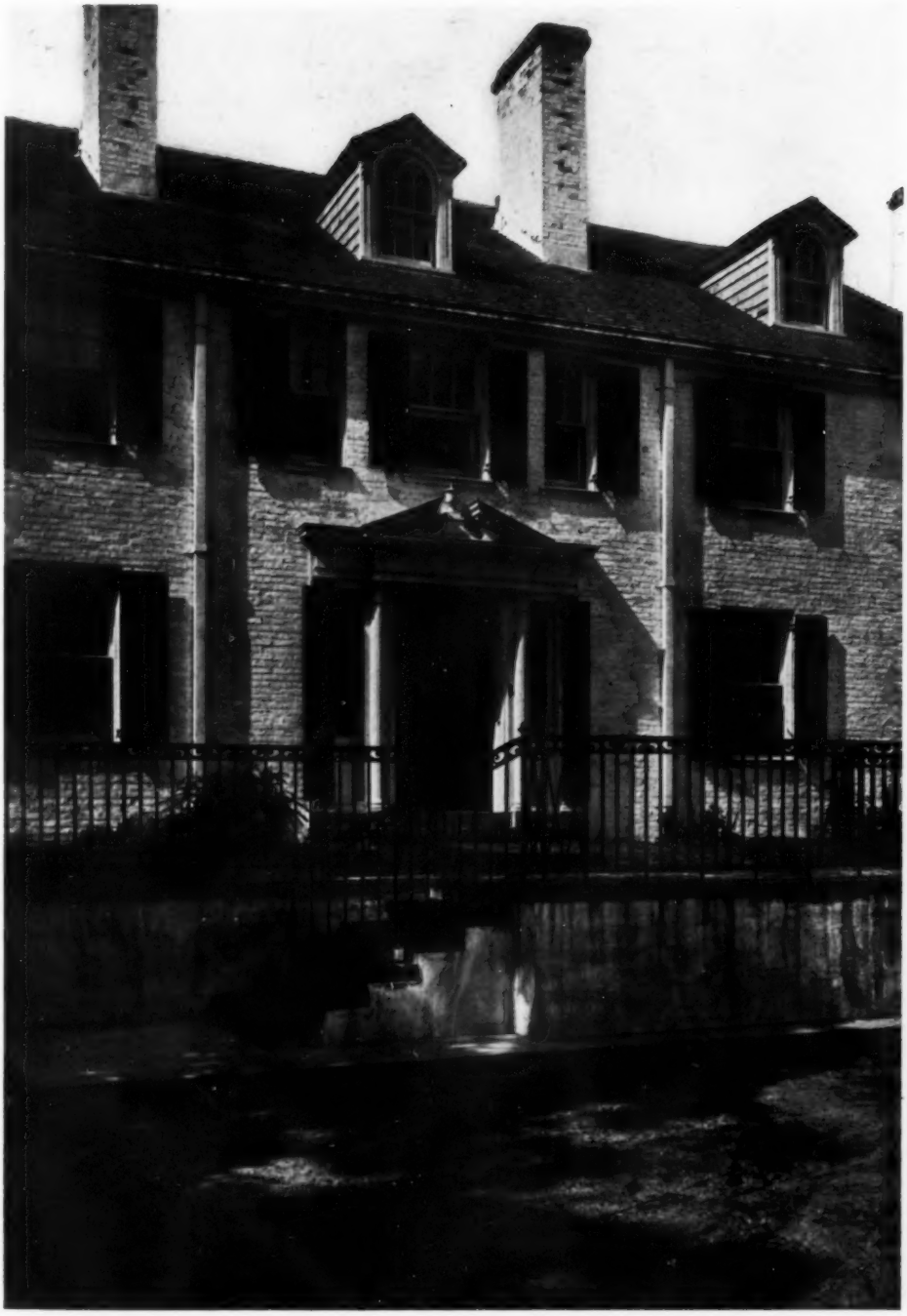
Altogether, this building project is quite as noteworthy from a social as from an architectural standpoint. It upsets many of the old New York real estate conceptions; yet, radical as it is, its elements have been tried out in former groups by the Queensboro Corporation and have met with striking success. The proof is that nearly one thousand families live at Jackson Heights and six hundred families have bought apartments there, thus developing one of the largest housing communities in New York city. It is a conservative statement to say that groups like these open a new era in American architecture. With the high cost of construction and the mounting cost of land, together with the operation of the Zoning Law, it becomes clear that economy in housing means large scale planning, construction, promotion and maintenance.




PORTFOLIO OF
CURRENT
ARCHITECTURE



RESIDENCE OF GEORGE DE FOREST LORD, ESQ., WOODMERE, LONG ISLAND. WILLIAM HARMON BEERS, ARCHITECT. FRANK C. FARLEY, ASSOCIATE.



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RESIDENCE OF GEORGE DE FOREST LORD, ESQ., WOODMERE, LONG ISLAND. WILLIAM HARMON BEERS, ARCHITECT. FRANK C. FARLEY, ASSOCIATE.

DETAIL OF FAÇADE — BULKLEY BUILDING, CLEVELAND, OHIO. C. HOWARD CRANE, ARCHITECT.

ONE OF THE ELEVATOR ENTRANCES—BULKLEY BUILDING, CLEVELAND, OHIO. C. HOWARD CRANE, ARCHITECT.

PART OF FRONT LOBBY—THE BULKLEY BUILDING, CLEVELAND, OHIO. C. HOWARD CRANE, ARCHITECT.

REAR LOBBY AND ENTRANCE TO SHOP—BULKLEY BUILDING, CLEVELAND, OHIO. C. HOWARD CRANE, ARCHITECT.

FRONT ELEVATION—RESIDENCE OF PAUL SHIELDS, ESQ., GREAT NECK, LONG ISLAND. C. I. PATTERSON, ARCHITECT.

GARDEN ELEVATION—RESIDENCE OF PAUL SHIELDS, ESQ., GREAT NECK, LONG ISLAND. C. I. PATTERSON, ARCHITECT.

ENTRANCE DETAIL—RESIDENCE OF PAUL SHIELDS, ESQ.,
GREAT NECK, LONG ISLAND. C. I. PATTERSON, ARCHITECT.

OFFICE BUILDING — ENGLAND, WALTON & CO., INC., PHILADELPHIA, PA. BOYD, ABEL & GUGERT, ARCHITECTS.

COTTAGE AT LYGON ARMS, BROADWAY, WORCESTERSHIRE, ENGLAND. E. S. CARPENTER, ARCHITECT.

COTTAGE AT LYGON ARMS, BROADWAY, WORCESTERSHIRE, ENGLAND.
E. S. CARPENTER, ARCHITECT.

COTTAGE AT LYGON ARMS, BROADWAY, WORCESTERSHIRE, ENGLAND. E. S. CARPENTER, ARCHITECT.

The EARLY ARCHITECTURE of PENNSYLVANIA

PART XII – Churches

By A. LAWRENCE KOCHER

THE variety of religious faiths in Pennsylvania is a key to the diverse character of church architecture of this colony. The traditional aisled edifice of the established church of England, the restrained and austere meeting-house of the Quaker faith, the medieval Saal of the Moravians, are but a few of many church forms that existed in Pennsylvania. This variety of forms is evidence enough that church builders were determined to go their own way, however similar their places of abode. Here is abundant proof of the influence of a creed or a ritual in shaping walls. Even more than the materials of construction does a use or a tenet dictate the external and internal disposition of a building.

Of the various religious buildings, the Friends' Meeting House was the earliest in its time of erection, the most primitive, and the simplest in construction and arrangement. These Quaker gathering places had a rectangular plan divided by a wall that separated the men from the women after the manner of the churches of the Eastern Mediterranean, with a double door or separate entrance for each of the sexes. The attention given to the appearance of the building was so scant that meeting houses seldom attained the distinction of real excellence in architecture, and so need not be given further consideration. We may also omit the unusual and exotic "Gemein Haus" or Saal of the "Pennsylvania Dutch."

St. David's Church at Radnor may be considered as characteristic of the church of the English Episcopal faith during the period of "beginnings"—before the builders of the colony had formulated a church style. St. David's was built by Welsh settlers of Radnor and vicinity in 1715. Its walls are of stone, laid up as random rubble work, in very much the same free fashion as were the walls of the Pennsylvania stone farmhouses of the same district. The exterior measures forty feet in length by twenty-seven in width; the height is eighteen feet from the floor to the "square" (lowest part of the slope of the roof). The entrance, an arch-headed doorway, is at the center of the side, flanked by round-headed windows. Two windows are on the opposite wall and a single large window penetrates the eastern end, behind the present chancel. The interior is devoid of pretense, and, as first built, revealed the timbers of the trussed roof above.

The stone Meeting House of Carlisle is an advance over St. David's and is typical of the larger inland church of the eighteenth century. It was begun in 1757 from drawings prepared by Robert Smith, better known as the builder of Carpenters' Hall in Philadelphia.

This Carlisle meeting house is a substantial and dignified structure in which any city or town could well take pride. While it lacks the finish and columnar grandeur which we may expect in centers architecturally more sophisticated, we must, nevertheless, grant the success of this endeavor—sturdy and honestly hewn, as though from the solid rock. It has a quality of appropriateness in a new world and it certainly could not have been set down on a London street without appearing incongruous. The edifice would have been a splendid base for a spire in the manner of the late eighteenth century.

The walls of this church are of partly dressed limestone combined with a smooth faced limestone to form the arches and horizontal bands at the spring line of these arches. The two end windows in the accompanying illustration were orig-

inally doors that have since been converted to their present appearance, while three doors were later added to the west end. The curious practice of adopting the side entrance received a wide usage, regardless of religious belief; and it was not until the opening of the nineteenth century that the traditional plan, with the entrance at the end, returned to favor.

The division of the interior into the ground floor and gallery is clearly expressed upon the outside by the double row of windows. The ground floor of this church, when completed, was of brick, raised along the outer wall, against which were placed square pews. The two entrance doors opened upon aisles which extended across the audience room and a high pulpit was placed on the northern side, centrally situated between two large windows. The pulpit ornaments were procured by the women of the congregation, who appear to have had no hesitancy in making their good works known to later generations. The superscription recording their gift reads:

"We the Subscribers, being informed that a sum of money is wanted to complete the Ornaments of the Pulpit in the Presbyterian Church in Carlisle, which was erected by a subscription raised by the ladies principally residing in said town; and willing that our names may also appear as promoters of so laudable a design, do promise to pay, into the hands of Mrs. Margaret Craighead, the sum annexed to our names respectively, to be forwarded to Mrs. John Montgomery in Philadelphia who is getting ornaments prepared for the above purpose."

No church in America has received more attention from writers on American Architecture than Old Christ Church in Philadelphia. With due respect for the ecclesiastical gathering places of New England, it is safe to say that the attention given to Christ Church is well considered and properly deserved. It is a church over which one can well enthuse, for its design and its finished detail are such as to challenge comparison with such London prototypes as St. Martins-in-the-Fields and St. Mary-le-Bow of Cheapside.

Dr. John Kearsley, physician of Philadelphia and amateur architect, assumed the superintendence of the construction of Christ Church in the spring of 1727. His part in the preparation of the drawings can scarcely be doubted, although the records are very vague in speaking of his connection with the undertaking. In 1743 the minutes of the church state that Dr. John Kearsley had served since the year 1727, "as trustee and overseer in carrying on and rebuilding the church, and for five years of the time had given daily attendance." In 1744 there is an entry in the minutes, "for building the outside of the church, which was done at two separate times,—there was paid to Dr. Kearsley £2,197."

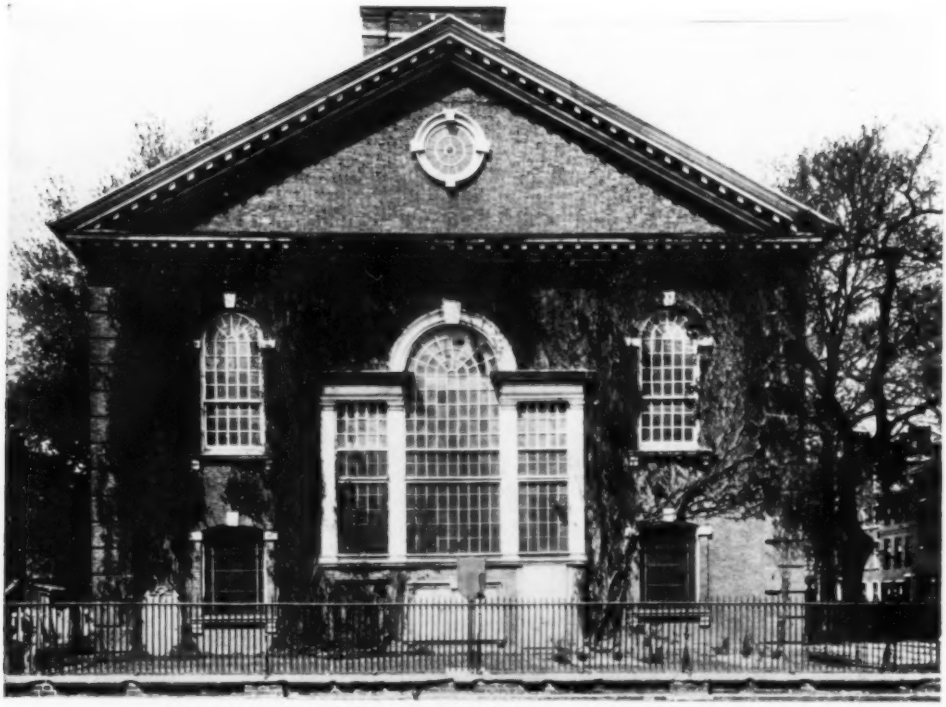
Since the term "architect" was not generally used in the colonial days in America, it is altogether natural that the title would not be associated with the name of Kearsley. There is strong presumptive evidence that Dr. Kearsley's services to the church included the preparation of certain necessary drawings, but that he was also materially aided in his undertaking by the independent trades and craft guilds of Philadelphia. There is every reason to suppose that the designer had before him the memory or drawings of early eighteenth century churches by James Gibbs, Nicholas Hawksmoore, or others; but here again the modifying influences of the new world with brick rather than cut stone as the available building material should not be lost sight of.

The exterior is built of red brick with black headers, with molded brick used for trim about the windows, at the wall base, and beneath the wood cornice. If there was imitation, it was done quite freely and with an understanding of scale and a good taste that betrays an uncommon degree of architectural skill.

Christ Church measures sixty-two feet in breadth by eighty-seven feet in length. The tower is twenty-eight feet square at the base. The steeple is one hundred and ninety-six feet eight inches from the ground level to the top of the weather-vane.

The exterior of the church is note-

CHRIST CHURCH,
PHILADELPHIA, 1727.



EASTERN END OF ST. PETER'S CHURCH, PHILADELPHIA, 1758.

INTERIOR OF ST. PETER'S CHURCH, PHILADELPHIA, 1758.

worthy for the decided success in which the interior disposition of the nave, floor level and galleries are shown and accentuated by the use of a two storied brick pilaster treatment and projecting ends. The molded wood details of the interior are noticeably lighter and more wooden in character than the vigorous handling of the exterior cornice, end gables and windows.

The spire of Christ Church was not erected until 1753-4. Its design is ascribed by records to a Mr. Harrison. Robert Smith of Philadelphia was its builder.

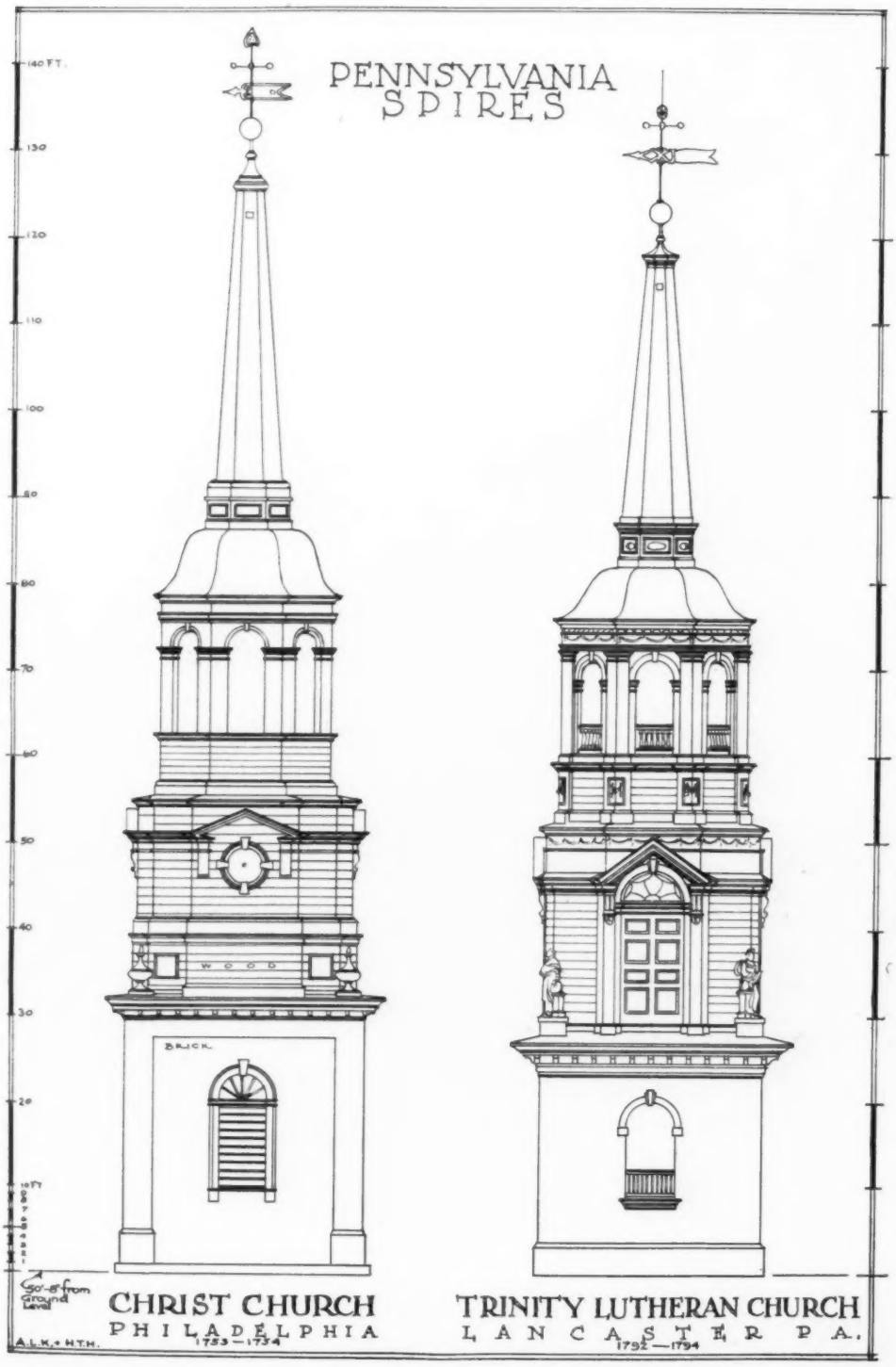
St. Peter's Church, Philadelphia, is one of the few churches of the colony with an interior unchanged by additions or other evidences of "progress." It has a decided savor of the past, with its high square pews and lofty pulpit. It was built in 1758-61 as an overflow chapel for Christ Church under the direction of a building committee of which Dr. John Kearsley was a most active member. This committee produced a "Plann or Ground Plot of the intended (St. Peter's) Church, ninety feet long by sixty feet broad; which was approved by the Vestry." The exterior is of brick with arched windows at the gallery level and low segmental arched windows at the ground floor. The entrances are at the south side. The brick tower was added in 1842 from the design of William Strickland, an architect of Philadelphia.

SPIRE OF TRINITY LUTHERAN CHURCH, LANCASTER, 1792-94.

Holy Trinity Lutheran Church of Lancaster does not attain the high success of the Philadelphia church, after which it was modeled. It is, nevertheless, one of the most beautiful churches of Pennsylvania. It was built by German Lutherans who migrated to Lancaster County in 1710. It followed an earlier church that soon proved inadequate both in size and dignity. The cornerstone of Holy Trinity was laid in May, 1761, and the construction progressed in a leisurely fashion until its dedication in 1766. The builder must have taken pride in his work, for he inscribed his name at the base of the tower, "Johannes Epple, 1761"; but no clue is given as to the name of the architect. The woodwork crowning the tower was begun in 1792 and carried to completion in 1794.

SPIRE OF CHRIST LUTHERAN CHURCH, YORK, 1811-1814.

ZION'S REFORMED CHURCH, YORK, 1793-1800. BUILT BY PETER AND JACOB SCHMAHL, DEMOLISHED IN 1913.


PENNSYLVANIA
SPIRES
140 FT.
130
120
110
100
90
80
70
60
50
40
30
20
10 FT
WOOD
BRICK
50'-8" from Ground Level
A.L.K. + H.T.H.
CHRIST CHURCH
PHILADELPHIA
1753 — 1754
TRINITY LUTHERAN CHURCH
LANCASTER PA.
1792 — 1794

CHRIST CHURCH,
YORK, PA.

TRINITY LUTHERAN CHURCH,
LANCASTER, PENNSYLVANIA.

QUAKER MEETING HOUSE, BELLEFONTE.

The spire of Christ Church was the forerunner of several worthy steeples erected within the commonwealth during the last quarter of the eighteenth and the early part of the nineteenth centuries. There appears to have been a wave of interest or pride in spire building during this time.

Into the building of these stout belfries and spires went a craftsmanship such as gave fame to the shipbuilders' art of Nantucket, Salem and the towns of the lower Delaware, and that gave lasting qualities and delight to the colonial doorways and mantels. The towns took no small pride in their church spires, and the erection of one of them was a civic event of much importance. Benjamin Franklin gave of his busy life to manage a lottery for the purpose of raising the "spire fund" for Old Christ Church.

The tower and spire of Christ Lutheran Church of York was built by all classes of workers of the community—by carpenters, masons, locksmiths and farmers.

The Philadelphia church spires were models for Holy Trinity of Lancaster, the Zion Reformed Church, and Christ Lutheran Church at York. In all of these the transition from the square base to the octagonal bell tower and spire is managed in a satisfactory manner. The tower of stone or brick, in each case, is conceived of as a kind of pedestal upon which the superstructure of wood is mounted.

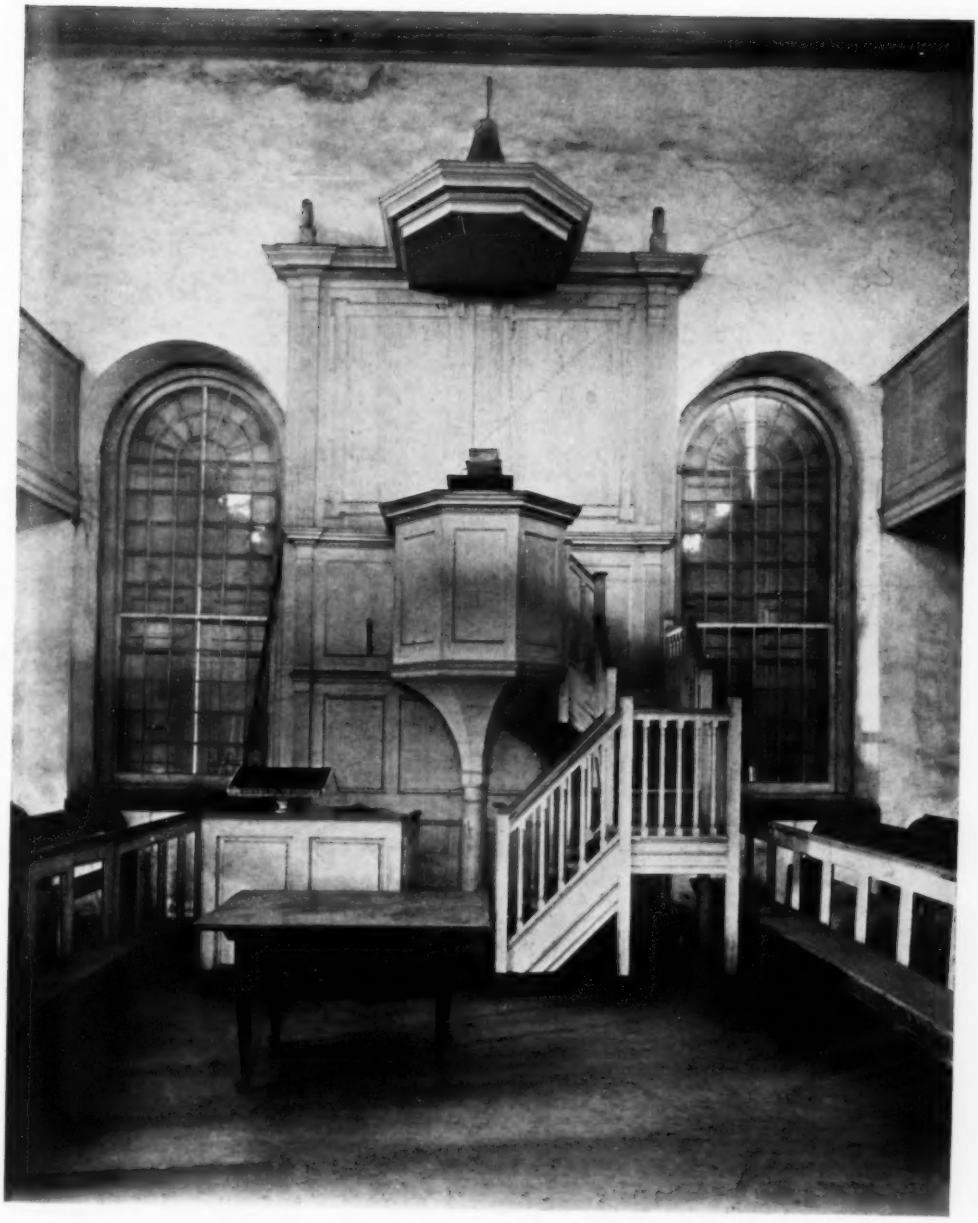
The Lancaster steeple shows some advance over the Philadelphia church in the completeness and the striking interest of the woodwork details. The builder of this spire was probably not the same individual who executed the construction of the body of the church, for a difference in the treatment of the woodwork in the two places is marked. The spire is quite light, refined and with a considerable grace of outline and finish; while the church proper displays moldings and doorway pilasters that are heavy and almost crude.

The wood figures at the angles of the belfry represent the four Evangelists, Matthew, Mark, Luke and John. They are unusual examples of sculpture in conjunction with the early architecture of

OLD SALEM CHURCH, LEBANON, 1796.
CHRISTOPHER UHLER, "MASTER BUILDER."

STONE MEETING HOUSE, CARLISLE, 1757.
Robert Smith, Architect.
Photograph by A. Allen Lime.

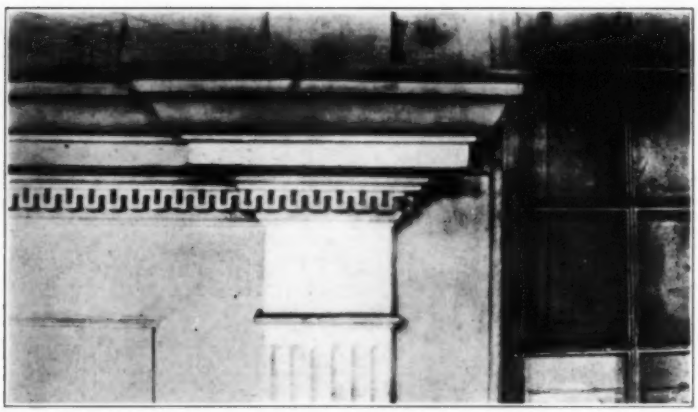
INTERIOR, ST. DAVID'S CHURCH, RADNOR, 1715.



"WINE GLASS" PULPIT, PEACE CHURCH, SHIREMANSTOWN, 1798.

America. It is probable that they were carved in the workshop of William Rush, the ship-carver of Philadelphia who made the wood statue of George Washington in Independence Hall, and who also made various architectural carvings—including the statues of Tragedy and Comedy which were in front of the old Chestnut Street Theatre of Philadelphia.

From this summary account of the church building activities of the Pennsylvania colony we should gain some idea of the chief characteristics and growth of early Pennsylvania church architecture. It would have been superfluous to do more than to examine the main types. Notwithstanding the diversity of forms, there is a certain sameness of plan that followed from the closely united community life. In all the worthwhile results there existed a continued dependence upon English classical models. In all there is a prevailing practicalness and a downright thoroughness of craftsmanship that gives a high rank to this phase of the architecture of the middle colony.



DETAIL OF PULPIT MOLDS, PEACE CHURCH, SHIREMANSTOWN.

A PLAYHOUSE AND STUDY

Designed by Mr. & Mrs. Thomas Hunt for the Children of Mrs. Daniel H. Hamilton, Centerville, Cape Cod, Massachusetts

BY THOMAS HUNT

With Photographs by Alice Boughton

ALONG a charming path that winds over a hill and through an airy grove of trees, nestling coyly among the branches, we come upon a cottage out of a Fairy-tale. Hansel and Gretel might have found the Old Witch here, or Red Riding Hood visited her Grandmother. In truth, it is a Fairy Cottage, and the good Fairy is Mrs. Daniel H. Hamilton, who had the impulse to build a wondrous playhouse for her children, Dan, Jr. and Margaret and all their friends. When the idea was first proposed to a local contractor, he submitted plans and sketches for a very ordinary type of wooden bungalow much like any we see along our beaches—but this was not at all to the good Fairy's taste.

Now, as artists are people "who meditate and conceive of pleasant things," the thought came to her that an artist would be just the person to plan her little building and all its furniture and decorations. No big architects, thought she, who dream only of some great public monument or building, but some artist who loves fairy tales and quaint little houses to play in.

Nothing could be more ideal than the site chosen on which to build. The house stands like a bright flower under the summer clouds on a little hill that rises above the flat marsh meadows, overlooking the white sand dunes of Cape Cod and the blue waters of Vineyard Sound. It's a jolly little house, with golden white walls and steep pitched red tiled roofs and a green oak door with hand-wrought latch knocker and decorated hinges. The woodwork is painted a glorious blue-green; painted panels recessed into the walls, symbolizing the four seasons, gleam jewel-like through the swaying branches of the wind-twisted pines.

In plan it is extremely simple. A main play room (20 x 30 feet), from which are extensions (16 x 18 feet) used as

STAGE IN THE THEATRE OF THE PLAYHOUSE. DESIGNED BY MR. AND MRS. THOMAS HUNT FOR THE CHILDREN OF MRS. DANIEL H. HAMILTON, CENTERVILLE, CAPE COD, MASS.

stage and studio respectively. A steeply pitched roof rising from low side walls, purlins and rafters, hand-hewn, with cross beams eased into the wall with brackets, all suggest great strength and stout construction and give a most picturesque quality to the interior.

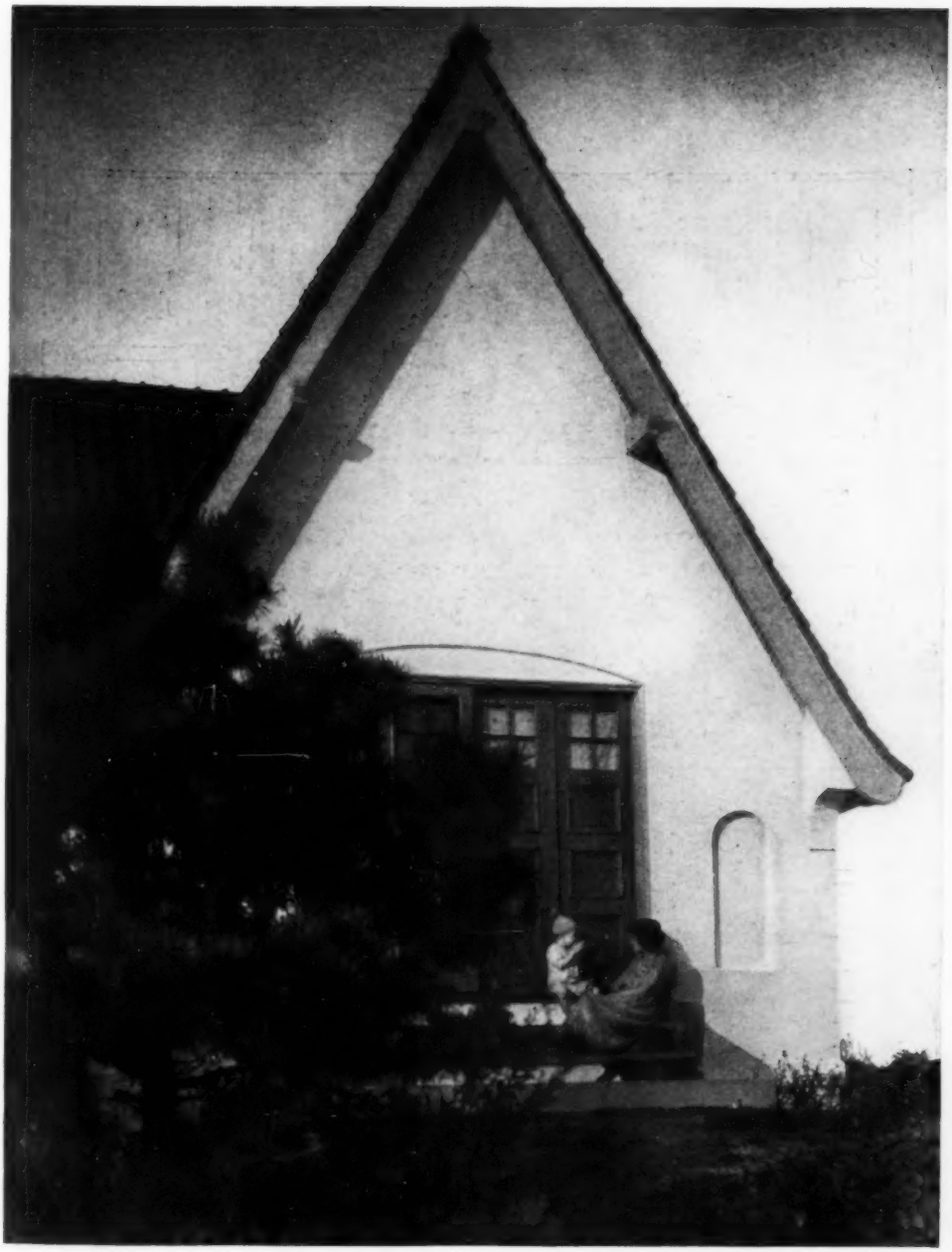
The fireplace, big and generous, faced with faience tiles from special designs and executed in glowing lines and hues, gives the cheering quality of an Old World peasant fireside. Deep embracing window seats and the low ceiling of the balcony overhead create a cosy and intimate inglenook, where to foregather and listen to pleasant tales on stormy days.

Big windows to let in air and sunlight —or to gaze up at the big white fleecy clouds—little windows to look out across the silver ribbon of the river, winding through the sedgy marsh. A wide, stout oaken door, round topped, with hand-wrought iron work, gives generous welcome to friends and promise of stout resistance against those rough giants, wind and water.

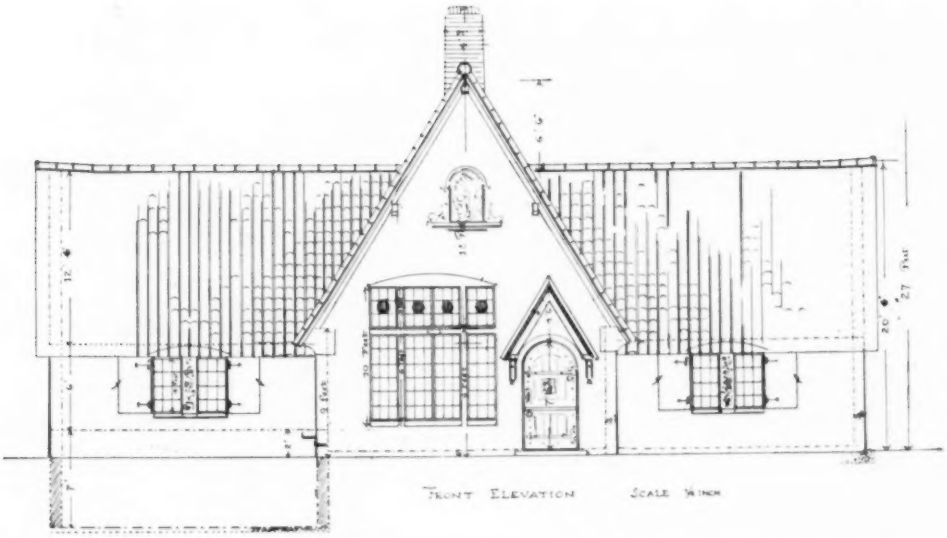
Originally planned to lay the floor in quarry tile, it was found from experience, that owing to the condensation of moisture due to fog, these would be extremely unpleasant for the children to play upon; so oak tiles, laid in nine-inch squares and colored alternately blue and orange, have proven a most happy thought.

Using the Hamilton Family Group as a motif in a unique and decorative design, electric wall sconces, executed in Persian faience tiling, diffuse a delightfully restful glow throughout the room and makes a very effective and beautiful lighting scheme. Supplementing these are two floor standard lanterns, models of what can be done beautifully without extravagance, painted a wonderful orange; the quality of light from these specially treated parchment lanterns is enchanting.

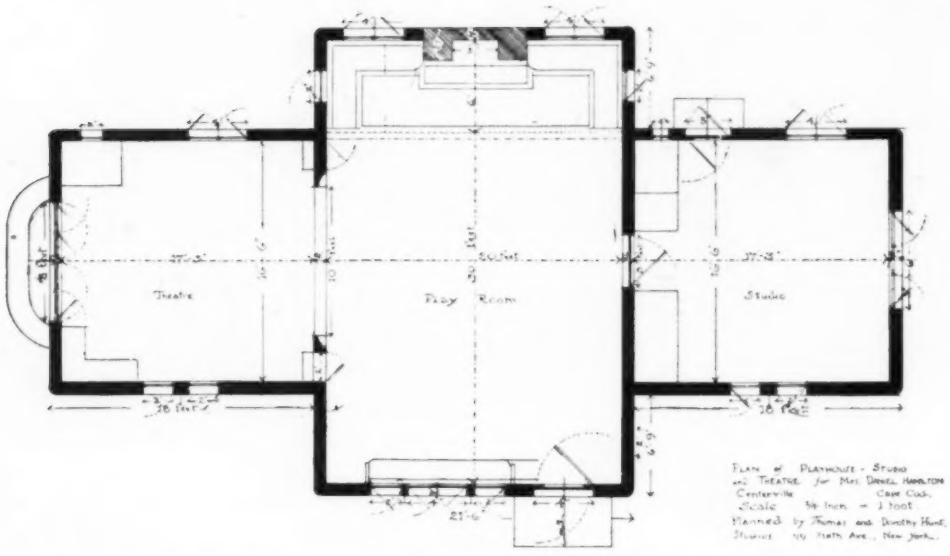
There is a suggestion of Gothic feeling pervading the building, undoubtedly. The



DETAIL SHOWING ONE OF THE GABLES OF THE PLAYHOUSE. DESIGNED BY MR. AND MRS. THOMAS HUNT FOR THE CHILDREN OF MRS. DANIEL H. HAMILTON, CENTERVILLE, CAPE COD, MASS.



FRONT ELEVATION. PLAYHOUSE DESIGNED BY MR. AND MRS. THOMAS HUNT FOR THE CHILDREN OF MRS. DANIEL H. HAMILTON, CENTERVILLE, CAPE COD, MASS.



PLAN OF PLAYHOUSE. DESIGNED BY MR. AND MRS. THOMAS HUNT FOR THE CHILDREN OF MRS. DANIEL H. HAMILTON, CENTERVILLE, CAPE COD, MASS.

DETAIL SHOWING FIREPLACE AT THE END OF THE PLAYROOM. PLAYHOUSE DESIGNED BY MR. AND MRS. THOMAS HUNT FOR THE CHILDREN OF MRS. DANIEL H. HAMILTON, CENTERVILLE, CAPE COD, MASS.

DETAIL SHOWING FRONT ENTRANCE TO PLAY-HOUSE. DESIGNED BY MR. AND MRS. THOMAS HUNT FOR THE CHILDREN OF MRS. DANIEL H. HAMILTON, CENTERVILLE, CAPE COD, MASS.

DOORWAY IN PLAYROOM, LOOKING TOWARD THE STUDIO. PLAYHOUSE DESIGNED BY MR. AND MRS. THOMAS HUNT FOR THE CHILDREN OF MRS. DANIEL H. HAMILTON, CENTERVILLE, CAPE COD, MASS.

angles of the roof—the eaves—the hand-tooled timbers—the heavy studded oaken door and simple flat wall spaces, and the marked simplicity of mouldings and trim—but it is only a suggestion and springs from the sincerity of the designers rather than from a studied attempt to copy some Gothic building.

The furniture, designed and executed by Mr. and Mrs. Hunt, carries out this simplicity of line and honesty of construction. It is strong and sturdy and well joined together, all of choice oak, but it has an elegance and grace quite its own. Painted a beautiful blue rubbed into the grain—preserving always the quality and texture of the wood—striped and ornamented a glistening orange—the inset paneled backs, painted with designs of figures and flowers in a modern style—glowing, rapturous color and gold leaf—against the flat, warm, rough plaster, they gleam like illuminated missal pages against a monastery wall.

Occupying the centre of the floor—for remember this is a real playhouse for boys and girls and grown-ups to really play in—stands the "Treasure Box," the repository of young "Dan Ham's" playthings, modeled after a famous old Spanish sea chest with hammered brass corners and straps and lock plate, with rings around the base to lash it to the deck in very—oh, *very* rough weather. All decorated with pirates burying their treasure—and Spanish galleons; an inscription from Masefield about the bold bad Buccaneers, running about the lid.

Over the fireplace and along the balcony, which is reached by a ship's ladder, are three painted panels executed by Mrs. Hunt, which bring to life again all the wonderful and enchanting characters of the fairy tales. Here are Red Riding Hood, Prince Charming, Cinderella, the Old Witch, the Enchanted Princess and Hansel and Gretel—all marching before us.

Someone suggests—"Let's have a play." All right—we agree—and someone draws aside that beautiful tapestry whereon is depicted the love and mystery of Pierrot and Columbine in an enchanted abandoned pleasaunce—and behold! we have before

LOOKING TOWARD THE RIVER.

us a perfectly equipped little stage, with footlights, spotlight and painted sets of scenery that any boy can fold up and arrange easily by himself and all the trappings of the make-believe world—with snow for the snowstorms and thunder—'n everything.

Opposite we enter into the other extension where our good Fairy plays in her own way, stenciling patterns of flowers and vines in lovely colors on silks and satins which she uses for gorgeous costumes in some of the childrens' plays.

So you see it is really a playhouse. Here are no classic mouldings, no orders and other nonsense. Not created in the pedantic spirit of striving to make something exactly like something or other according to some frozen tradition, but conceived in a spirit of play and a spontaneous desire to build a simple house with good proportions and beautiful. Perhaps this has not been achieved altogether, but it is something to have preserved even a little of this quality in our sober work-a-day-world.

VERY ANCIENT CORNCRIB, NOW ABANDONED; GRANITE ROOF SLABS ARE NINE FEET LONG.

The ANCIENT SPANISH GRANARY

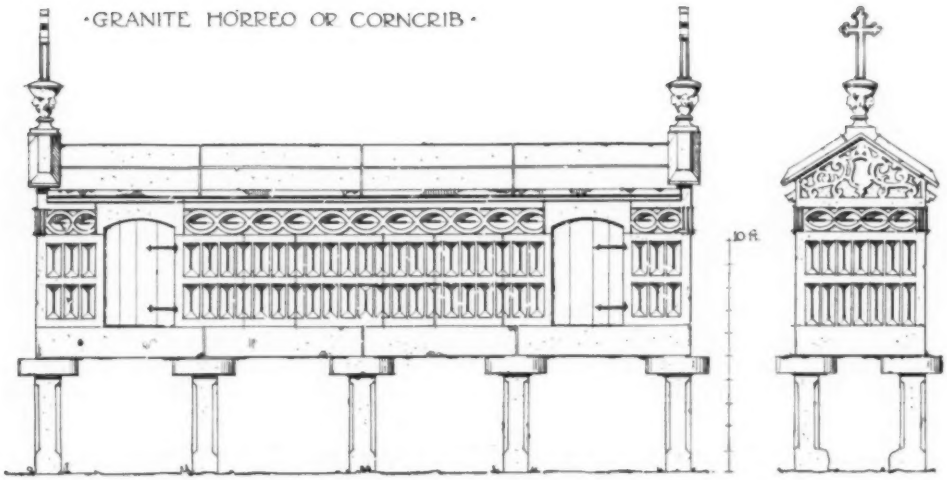
BY MILDRED STAPLEY
WITH PHOTOGRAPHS by ARTHUR BYNE

Photographs reproduced by courtesy of The Hispanic Society of America

THE typical granary of northwestern Spain—Galicia and Asturias—is called *el hórreo* (Latin, horreum). This diminutive edifice is not peculiar to large farms; every rural inhabitant above the day-laborer class has his hórreo, in which to guard for the coming winter all the wealth his little patch of ground has yielded—grain, potatoes, nuts, beans (to say nothing of savory sausages and hams that hang from the roof beams). As Galicia and Asturias are divided into small holdings, the property of returned emigrants whom Fortune favored in South America, the hórreo is ubiquitous. Stilt-mounted, well and artistically built, generally topped by a cross or pinnacle, it never fails to excite the admiration and curiosity of those who have the good luck to visit the beautiful Cantabrican and Galician provinces.

My own first impression was that the latter region could boast twice as many hórreos as the former; but the Asturians promptly set me right. Not only are there more in the territory between Coruña and Santander, but that is also their natural habitat, so to speak. From Asturias they spread east into the Basque province, west into Galicia, and thence into Portugal. It was the same line of exodus, our Asturian informant added, that the young Spanish nation itself took—born in the Cantabrican cave of Covadonga, it sallied forth to beat back the Mohammedan invader and plant Christianity and corn-cribs (the irreverent juxtaposition is not mine) both east and west. As might be expected, it is here in its Asturian cradle that the hórreo has kept closest to the primitive type; that is, it is still built almost exclusively of wood, whereas in Galicia stone is more often seen.

Whatever the material (straw matting and wattle are encountered in Portugal) the principle is the same—always a small house of one chamber resting on columns about six feet high. "Columns" is perhaps too architectural a term, for the rural builder frequently uses nothing more pretentious than a stout timber or



AN XVIII CENTURY EXAMPLE NEAR PONTEVEDRA.

a flat slab of granite whose only preparation for its function is the narrow-in at the top. When the support is rounded this same tapering is preserved. This basic element of the hórreo is called *el pegollo*. In Asturias where the square hórreo is general, four pegollos are driven into the ground; in Galicia, where the oblong shape is the favorite, there are six and even eight to a side. Before the floor beams are laid, each pegollo is surmounted by a flat stone, square in Asturias, disc-like in Galicia and curved on top exactly like a giant petrified mushroom. This part must always be of stone. In Asturias it is called *la muella* (mill stone), but its Gallegan name is more apposite—*tornaratas* (turn off, or protect from, mice). Thus by the simplest possible means the hórreo is made rodent-proof and dry (though some may claim that the inverted tin pan of New England is simpler). The identical mushroom device is employed in the rice-cribs of Madagascar. It is said not to be due to the indigenes, however, but to have been brought to the island by European colonists.

The rest of the construction of the hórreo is along the usual lines. Where wood is the material the floor beams project and frequently form a little gallery with the same spindle balustrade that is seen in the loggias of the Asturian houses. Sometimes the sides are boarded up consecutively, sometimes on a framework of panels. The roof is hipped, has broad eaves, and is covered with red tiles, but thatch is not infrequent. The cross, or perhaps a weather vane, rises from the center. To enter, a portable ladder is used, or a stone stair which stops about eighteen inches short of the door; this solid stepped mass of masonry is called *la subidora*. Altogether the Asturian wooden granary is more domestic-looking than its granite offspring in Galicia. The granite type, on the other hand, were it not raised on stilts, would suggest a simple mausoleum of careful design and costly construction rather than the ordinary adjunct of a rustic residence. Size, shape, and the cross above give this impression.

As it is the custom in this province, Galicia, to stack the grain in the hórreo to dry instead of curing it in the open, as the Asturians do, good ventilation is a prime requisite. The devices for airing the grain are interesting—an adaptation of shutter slats pierced through thick slabs of stone, with the slits running vertically rather than horizontally. Three such slits are pierced in each slab, just as the old Plateresque stone cutters used to shape three Italian spindles for a stair

GRANITE GRANARY—XVIII CENTURY—WHICH FRONTS THE MAIN STREET OF PONTEVEDRA, GALICIA.

WOODEN CRIB ASTRIDE A FARM GATE, NEAR ORENSE.

rail out of each separate block. The entrance is sometimes at the end, sometimes at the side, and there is no built-up stair. The shape being oblong, the roof is of two slopes, with either the cross or a Herrera-like pinnacle at both ends.

Where the hórreo should be placed in relation to the dwelling appears to have been left to caprice, like so much else in Spain. In front of the house, behind it, or on top of it; astride the gate in the stone wall, like a lich-gate; across the way, or in groups of three or four on the nearest hillside; on the banks of a stream or in the very stream itself, like the now submerged lake-dwellings on stilts, built thousands of years ago in Switzerland. The manner of adorning the structure is equally personal. Wooden ones are gaily painted green or vermilion, or the doors only are painted; or the doors are carved in geometric devices such as are found on Asturian bridal chests and other pieces of furniture. This is the decoration in the Naranco example; though not easy to detect in the photo, it consists of old barbaric motifs common to all Europe in the early days, and used by the Asturians in adorning the first Christian churches built in the newborn kingdom of the ninth century. The same designs reappear in the pediments of some of the stone granaries, carved there in spite of the obstinacy of the material. For the rest, the granite hórreo depends for embellishment on its ventilating slits, its pinnacles, of which there is great variety, and its painted door, on which good strap hinges occasionally figure.

About the only departure from the traditional form of slits is the double-storied structure, which simply means that the ground space between the upright supports is walled in with granite blocks to provide shelter for domestic animals. When this is done a wide cornice, flat on its under side and sloped on its upper, takes the place of the separate *tornaratas*.

An interesting treatise on the Iberian hórreo has been prepared in Spanish for the *Comisión de Investigaciones Paleantológicas y Prehistoricas*, by Eugeniusz Frankowski of the University of Cracow. "Hórreos y Palafitos de la Peninsula Ibérica," por Eugeniusz Frankowski. Published by the Junta para Ampliación de Estudios, Madrid, 1918. This author holds the theory that it is but a highly architectural survival of man's habitation during the stone and bronze age, when the raising of the shelter on stakes was, like the subsequent raising of the couch on four legs, a precaution against dampness and insects; furthermore, in the case of

WOODEN CRIB ON THE NARANCO MOUNTAINSIDE, ASTURIAS.

HILLSIDE CORNCRIB NEAR PONTEVEDRA, GALICIA, XVII CENTURY.

CRIBS AWAITING THE HARVEST AT COMBA DE BANDA.

the human shelter, against predatory animals, including man himself. This primitive expedient answered so well for the curing and storing of grain, after man had evolved to that point, that the wooden hórreo on stilts was retained long after the human habitation had reached a high degree of perfection—after wood had been discarded for stone, and airy stilts for a solid foundation below ground. Granaries on poles are no rarity, neither are dwellings on poles; in Central and South America, in the Malay Archipelago, they are a safeguard against tropical rains; in Europe, chiefly in Iberia and the Balkans, they are rather a manifestation of atavism on the part of the races concerned. A proof that the same form of structure was known to prehistoric Spain is found in the notable cave paintings of Altamira, near Santander, in the Asturias. From these invaluable representations of life during the dawn of human culture one can trace the pedigree of the Asturian granary; our author goes even further: one can trace the evolution of the ancient temples of Egypt and Greece. "In all the parts which compose the temples, even those parts which appear at first glance but simple ornaments, one can detect the vestige, though atrophied, of what was once an indispensable element of the paleolithic and neolithic house on stakes."

To the unarchaeological mind it may seem a far cry from the Spanish hórreo to the classic temple, but nevertheless Professor Frankowski presents a clear argument when he claims that the moment the rude wooden stake was changed to stone, shaped and surmounted by a disc, the classic column with capital had begun its long period of gestation. The state-house origin is again visible in the picturesque half-timber architecture of medieval Europe, and still plainer to read is the relationship between the traditional Iberian granary and the column-supported first story of the houses that surround any Spanish plaza.

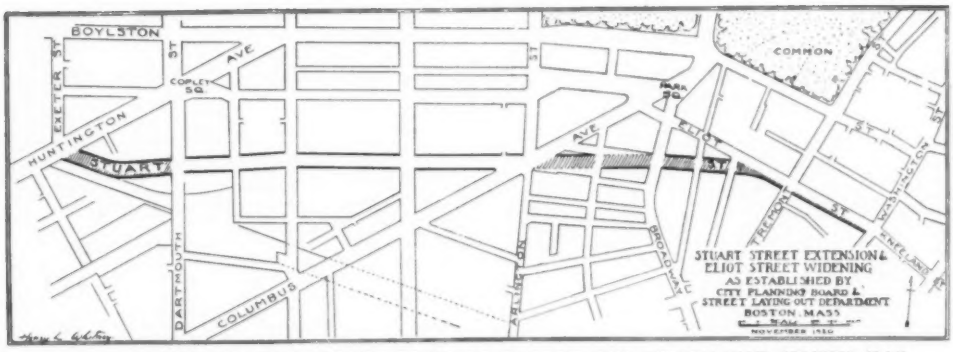
Street Nomenclature in City Planning

Is Rotten Row of Hyde Park, London, less fragrant in the spring time than Berlin's Unter Den Linden or less Elysian than the Champs Elysées of Paris? Is Via Venti Settembre in Rome more historic nationally than Pennsylvania Avenue of America's capital? Will Sixteenth Street in Washington, re-christened "Avenue of the Presidents," become more significant thereby than the route trod by inaugural processions since the time of Jefferson, along whose course were borne the martyred bodies of Lincoln and McKinley? Is a street or boulevard or avenue endowed with attribute or grace in the naming; can it be made to contribute more largely in civic usefulness by its designation? The City Plan Commission, of Boston, believes so and has made several ventures in street re-naming.

Street names originated as the outgrowth of conditions; later they were chosen arbitrarily. Ofttimes, in such case, they were endowed with names of distinguished men. Street names in recent times have descended to the category of embellishment, chosen for melodious or alliterative sound, for mere prettiness of association. One of the first acts of the recently appointed City Plan Commission, of Raleigh, North Carolina, was to discourage a redundant use of "Fairview" in the naming of street, avenue, terrace and parkway of a new subdivision. How irrelevant to streets are such names as Summer and Winter, Oak and Chestnut and Pine, Water and Milk! An early English traveler wrote of America as "a land whitewashed with unmeaning names—the cast-off clothes of the country from which the emigrant came." Are the street names in New England cities a form of plagiarism or "the affectionate covering of the new continent with the familiar patronymics from dear old England," as a more sympathetic English writer noted. Are the Columbus Avenues in cities throughout America a tribute to the discoverer of this country? Is the Washington Street of every city and town in America in memory of the Father of Our Country or an easy following of habit or custom in street naming? From the fact that new communities and growing towns today copy the nomenclature of neighboring cities and adopt hackneyed, meaningless street names, we may believe that repetition or irrelevancy in street nomenclature in American cities has resulted chiefly from indifference or downright laziness on the part of city fathers.

Street names are not to be selected *ad lib* or invented in Pullman car fashion. Analytically, they may be considered in three aspects—descriptive, commemorative, functional. The old portions of a city usually possess names once expressive of the locality, such as High or Highland, River or Canal, Forest or Grove, Beacon or Haymarket or Battery Street. It is said that the archaeologist can often trace previous conditions of topography, the hills and valleys, streams, meadows, woods and fields, by studying the record left in names; and the history of successive civilizations likewise. The Britons, Romans, Anglo-Saxons and Danes left clear trace in the names found in English cities today; and American cities are rich in Indian nomenclature. Only is historical record perverted and falsified by such arbitrary act as that of the surveyor general of central New York, who pedantically assigned the classical names of Troy, Utica and Syracuse to the settlements of the military tract in his charge—less euphonious and lacking the historical significance of the Indian names, Onondaga, Cayuga, and innumerable others. How fortunate that, though originally taken as State designations, we find today such beautiful Indian names given to the avenues of our national capital as Arizona, Nebraska, Wisconsin, Wyoming, Tennessee and others.

Names attached to the older streets of a city, the heritage of original condition or circumstance, should rarely be discarded. They comprise the historical record and background



A NEW ARTERY IN THE STREET PLAN OF BOSTON FOR WHICH THE MONEY HAS BEEN APPROPRIATED. THE CITY PLANNING BOARD HAS OPPOSED THE RECENT PROPOSITION TO CHANGE THE NAME OF KNEELAND STREET TO STUART STREET.

of a city's growth and point the way to selection of descriptive names for newly laid out streets. Unpleasant appellations should, of course, be avoided: Muddy Creek, Snake Bottom, Bear Hill have handicapped entire localities, while Hills and Dales, Garden City, Forest Glen will attract residents to a community. Pomander Walk is preferable to the equally descriptive Pie Alley. A name to which ridicule attaches may do injury: Main Street will henceforth be viewed with little favor. Unfortunate street names may deter residential building in an entire section of the city.

Names of commemoration are least pertinent to a city's streets. Frequently they are given in the flush of enthusiasm over an individual exploit or accomplishment, of small importance in light of later times. A street name is in a sense an empty honor, revokable with the passing of a man's popularity, uninspiring without accompaniment of explanatory tablet or monument. Unless a person or event is worthy of more substantial memorial than the quick naming of a street, the name itself will soon lose significance and the street *per se* serve in no sense as a historic monument.

Fundamentally, names are a utilitarian part of a city's street system, needful for purposes of identification, for convenience in giving direction, for ease in locating one's whereabouts. The two principal streets of a city plan, if intersecting at right angles and of orientation to permit, may logically bear the name of the cardinal points. Alphabetically and numerically named streets have the virtue of offering guidance. If, as is sometimes contended, letters are harder to recollect than names, alphabetical titles may be used, such as Arlington, Berkeley, Clarendon, Dartmouth, etc., in the Boston street system. Paris in 1806 exhibited an ingenious method of designating street directions, of which we read: *"L'inscription des rues a été faite aux coins de toutes les rues, ruelles, culs-de-sac, etc., sur un fond jaune, bordure bleue, en lettres rouges ou noires, en lettres rouges pour les rues qui sont paralleles à la rivière de Seine, et en lettres noires pour celles qui lui sont perpendiculaires"*—an idea which could well be emulated in street signs today.

Functional street names elucidate the city plan. The city of Boston appreciates that continuity of street lines may be disrupted by a succession of names. A year or so ago when Arlington Street was cut through to Columbus Avenue, Ferdinand Street, lying beyond, was re-named Arlington Street; and Castle Square, the terminus of that street, became Arlington Square. Again, Pleasant Street, leading from Park Square to Washington Street, was changed to Broadway, connecting thence over the Broadway Bridge to South Boston. There was ample precedent for this in Boston, as Washington Street in pre-Revolutionary days was Orange, Newbury, Marlboro Street and Cornhill; and Massachusetts Avenue was originally called Weschester Park, Chester Park and Eastchester Park.

Recently a converse case occurred. Stuart Street, which is being widened and extended in accordance with the plan illustrated, eventually is to be continued to relieve a greatly congested business district beyond. A group of business men petitioned the Board of Street Commissioners to change to Stuart Street the name of Kneeland Street, which in a sense continues the general line of the new artery. The City Planning Board opposed the petition, realizing that the very re-naming of a street would in effect deflect the thoroughfare from the destined point of congestion and jeopardize the completion of the arterial connection contemplated. The Mayor concurred in their recommendation.

Boston has perhaps made mistakes in street

re-naming in the past. Washington Street, North, was once Charlestown Street, which street now extends from Charlestown on one side of Boston to West Roxbury on the other. The street plan of the city proper would more clearly interrelate with outlying communities had the name of Charlestown Street been retained and were other streets to bear likewise names of the towns to which they lead. The Boston Post Road serves Boston bound traffic, and reciprocally named thoroughfares would furnish plainly read connections with other points.

Street names signifying objective points within a city are of great convenience: Avenue de l'Opéra, Avenue de l'Observatoire, and Boulevard de l'Hôpital are familiar examples in Paris; and as example of similar nomenclature in a small American community, Quaker Street of a little town up-state in New York leads to the Friends' Meeting House, and Quarry Street, as quite to be expected, leads to the quarry.

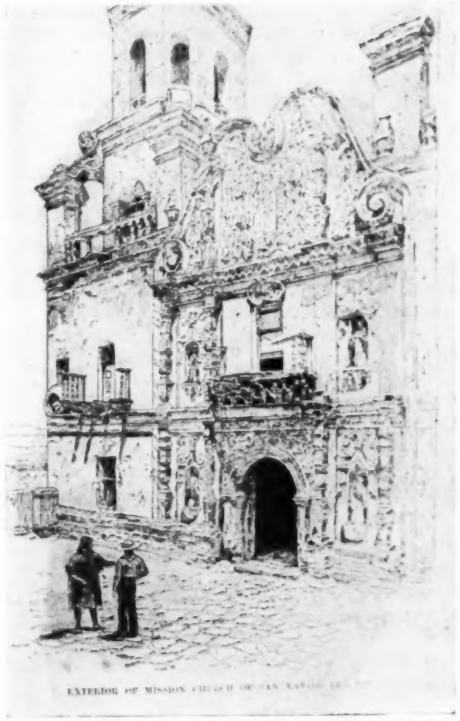
There need be felt no hesitancy in changing street names to clarify the city plan. It is no more improper to re-name a street than a town. At one time, it is said, there were thirty-nine towns named Jackson in Indiana; New York was once Manhatta; Nova Scotia, Acadia; even Boston was not always Boston, for in 1630 the city changed its name from the previous one of "Trimountaine"—in this case the original name would have been more unique, perpetuated as it has been in one of Boston's most important thoroughfares, Tremont Street. But a plea for originality of names would fall upon deaf ears in *New* England and is apart from question of descriptive merit, commemorative value or functional purpose in the appraisal of street names in the city plan.

The City Planning Board of Boston is awake to the possibilities of street nomenclature in the furtherance or hindrance of their projects. City plan commissions elsewhere may profitably examine existing street names of their cities with view to street designations that shall serve in other respect than as "historic monuments of men and events in past history."

GEORGE BURNAP.

Review of "Mission Architecture as Exemplified in San Xavier del Bac"

In an altogether forgotten article on the Spanish-Mexican Missions of the United States in The Architectural Record for September, 1903, occur two rare and interesting photographs of the finest church built in that style which is now extant within the limits of the United States. This is the church of the Mission of San Francisco Xavier del Bac,



EXTERIOR OF MISSION CHURCH AT SAN XAVIER DEL BAC.

nine miles from the present city of Tucson, Arizona. Known only to a few appreciative admirers, the church is the subject of a careful architectural study in a recent book by Prentice Duell, A.M., of the University of Illinois. The title of the work is "Mission Architecture as Exemplified in San Xavier del Bac, including a complete list of the Missions in the Southwest, also a Bibliography of the Manuscripts and Works pertaining to the Subject."

The author wisely points out that the architectural charm of the well press-agented California Missions is somewhat due to their simplicity of line and weathered surfaces, but far more to their ideal setting under a clear blue sky and encircled by green hills, while one could scarcely recline at ease to contemplate the more elaborate and statelier exterior of San Xavier del Bac in a burning desert in a furnace heat of 120 degrees. Facing southward to welcome the supply trains and wanderers from Mexico, this isolated cathedral towers to-day above these barren deserts that caused such misery to early explorers. It is a church ideal in proportion, exquisite and perfect in detail, and well worthy of further study.

Many excellent views are included in this book, some of great archaeological value, showing the mission as it was when abandoned in the early '60's when its forecourt wall and gateway were standing and before the fall of the cemetery wall. Later illustrations show the church as lovingly restored by the Bishop of the Diocese of Tucson, the Rt. Rev. Henry Granjon, a restoration that can be criticized in detail, but to which we owe the preservation of this gem of Spanish art. Too much cannot be said in praise of the Bishop for his expenditure of time, service, and money in this labor of love.

Six plates of measured drawings show block plan, front elevation, figured floor plan, East elevation (wrongly labeled "West") with details of font, doors, and pulpit, a transverse section through nave and towers and another longitudinal section showing the wonderful Byzantine system of vaulting and the perfectly proportioned dome. Mexico is described as the land of church domes and nowhere could one find a dome more perfect than this. Another plate gives details of the towers, baptistery, balustrades and buttresses of the towers, while a sixth sheet shows fixtures, vaultings and arrangement of the mission buildings. One longs for more detailed drawings of the other woodwork, front doors, turned wood *rejas* of the windows, and the most fascinating and totally Spanish corbelling under the balconies of the facade. The elaborate Churrigueresque *retablos* would be worthy of careful measurement, but the very intricacy of the detail makes that work a formidable task.

Mr. Duell traces the origin of the typically Spanish churches of Mexico, with their numerous domes, to the eastern basilica where the Roman style passed into the Byzantine and later in Spain and North Africa into the Saracenic. To say that San Xavier is related to San Sophia is truer than the seeming play on words. This whole style developed in Mexico in a wonderful manner. Few people realize the number of great domed churches in Mexico; and fewer still realize how early the Spaniards began to construct such edifices. As early as 1539, only forty-seven years after Columbus touched the new world, the Bishop of Tlaxcala transferred his cathedral chapter from Tlaxcala to the Pueblo de los Angeles because at that time the latter place had a stone church with three naves.

The Plateresque and Churrigueresque styles are reviewed and the influence of the Aztec decorative schemes noted. The reviewer must dissent from the impression given that the Churrigueresque is always a bad style. Professor Revilla, quoted in Baxter's "Churches of Mexico," denies neither its incorrectness nor its defects, but objects to its condemnation by students who commend the Renaissance style, which, it is true, goes not so far as the Churrigueresque in departing from classical proportions and simplicity, and yet in its development into the Baroque becomes as exaggerated a style. Treated as a decorative style, to be used in concentrated masses of ornamentation against blank wall spaces, it has a beauty of its own. It is Spanish in development, Spanish in feeling, and reflects the manifold colors and complexities of that great golden age of Spanish art. "Not in vain did the Churrigueresque have its birth among a people profoundly religious, and in an epoch where faith was still intense, for to an extraordinary degree it became an expression of Catholic mysticism, as did the Gothic in the Middle Ages. Marvelous is the power of Art to express one and the same sentiment through the media of diverse forms."

For comparison this volume contains a number of illustrations of the missions of California and Texas, especially the great church of San José de Tumacacóri, Arizona, which is now a ruin, but most interesting for a further study of brick construction. The reader is taken for a tour of the church and mission building of San Xavier del Bac, and the pictures, altars, bells, etc., are described in turn. The book contains several misprints and mistakes due to the fact that it was published during the author's absence in military service. Altogether it is a worthwhile work, and one that reflects great credit upon the compiler. It is published by the Arizona Archaeological and Historical Society at Tucson. Price $2.25.

DONALD MILLAR.

A Group of San Antonio Cottages Showing Spanish Influence.

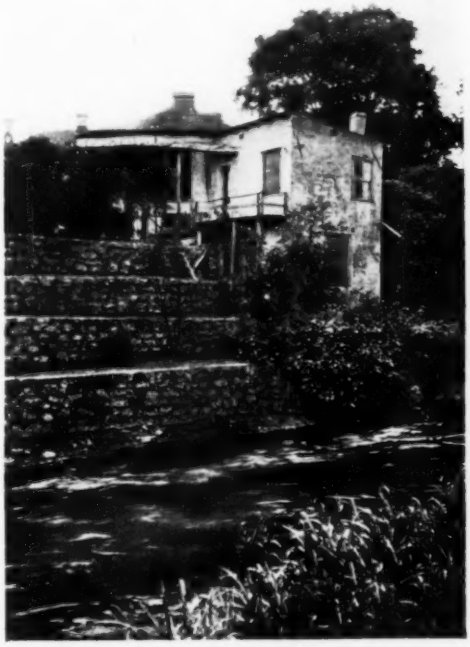
In studying the architecture of American cities, it is interesting to note how distinct is the cleavage between different periods. We are acustomed to these differences in the architectural styles of the Old World, but with a history so brief as ours one might expect a greater uniformity of type in any given place. However, even a city like San Antonio, Texas, which remained a frontier town longer than most American cities, exhibits a succession of architectural types. One of these immediately preceded the Classic manner introduced at the beginning of the nineteenth century,

AN INTERESTING STUDY OF THE DIFFERENT TYPES OF CONSTRUCTION.

and is seen mostly in small cottages built either by the Spanish settlers or by others who followed the traditions established by them. Simple as these little buildings are, they show unmistakable evidence of the Moorish influence that was dominant in Spain.

The construction of the cottages varies considerably. The cheapest are built like the *jacals* of the Mexican peons, with a framework of posts and sticks, which is plastered over with adobe clay and finished with a coating of white cement plaster. Another type is built of brick or blocks of sun-dried adobe, and a third is of rough stone construction. These also, like the *jacal* type, are finished with a coating of white plaster.

One of the accompanying illustrations furnishes an interesting study of the different types of construction. The first house in the group has the framework of sticks and was evidently built originally with a flat roof, the slant roof, with its gable of clapboards, having been added later. The dilapidated condition of the plaster affords an opportunity for examining the construction of the walls. Next to this is a stone house on which the end walls have been carried up into a gable for a slant roof.



QUITE A PART OF THIS PRIMITIVE HOUSE ARE THE STONE STEPS.

THEY ARE PICTURESQUE AND ARE THE DELIGHT OF VISITORS FROM THE NORTH.

A DISTINCTLY SPANISH COTTAGE.

THE OLD ROOF LINE HAS BEEN PRESERVED THOUGH OLD MATERIAL HAS GIVEN WAY TO NEW.

SIMPLICITY IS THE SECRET OF THEIR ATTRACTIVENESS.

Here again the peeling plaster reveals the crude masonry of which the walls were constructed. The third house is either new or has been replastered recently, and gives an excellent idea of the original appearance of the others.

It is quite possible that some of the earlier houses with sloping roofs may have been covered with thatch, for it is used quite commonly by the Mexicans along the border today. The flat roofs, which were much more common if one may judge from old illustrations, were probably made of a thick layer of clay, packed closely on a foundation of sticks and branches supported on heavy wooden beams. These primitive materials have given way long since to the less picturesque but more dependable, or at least more easily applied, sheet iron and shingles.

The little structures may not be regarded as possessing great architectural interest, but they are picturesque and are the delight of visitors from the North. The thick walls make them durable and they are of course fireproof. They are extremely comfortable, being cool in summer and easy to heat during the winter months. Their very simplicity is the secret of their attractiveness; and when covered with vines and surrounded by flowers they possess undoubted charm.

I. T. FRARY.

Review of "Decorated Wooden Ceilings in Spain."

The book on "Decorated Wooden Ceilings in Spain," by Arthur Byne and Mildred Stapley, published by The Hispanic Society, is a treasure house. It is surprising to find such a wealth of material from a source apparently so limited in scope and so little known. The material is not only voluminous but extremely varied.

The ceilings of Spain are divided into several types: wood vaults, trussed ceilings, beamed, panelled and coffered ceilings as well as the stalactite ceilings of Moorish design. It is, however, the unusual treatment and the original and little known details and decorations that make this book one of preëminent interest.

Spanish art is in general bold, one might even say crude. It is vivid, brilliant and imaginative. It does not lack beauty or suavity, but these are not characteristics which make a dominant impression. The examples illustrated in the book create and strengthen this impression. Not only may this be noted in the general design but in the detail and the color.

The work is thorough and scholarly. The history of the design, construction, and some notes on the workmen, the general relation to Spanish art and classification, and the periods of the various ceilings are thoroughly discussed. The book is, however, to be chiefly commended for its illustrations. There is, I think, far too much scholarly discussion and criticism of an abstract nature on subjects of artistic interest, of painting, sculpture, architecture and the allied arts; subjects whose appeal is chiefly to the eye. It is the physical appearance of the object of art that is of primary importance, and here the book excels. The beautiful examples are numerous, they are carefully selected and each one is most thoroughly shown. In most examples one finds a general photograph, details, a drawing to scale, and in some examples color plates of great beauty. How I shudder to think of the old German *relévés* of the Pompeian and Italian decoration in color. Probably the original drawings of the illustration of this book are much better than the old ones, for Mr. Byne is a highly trained artist and connoisseur as well as a careful and faithful student. The modern printing methods have also improved over the older color plates. Be that as it may, the book is much better done than any other of the kind that I know.

Every kind of detail has been carefully illustrated. One has a feeling of a great view over the whole realm of Spanish art and history through the perfection of the presentation of this limited subject. The ceilings, of course, are related to the plan of the buildings, and this relation is clearly brought out. Thus from some examples one gets an insight into the plan, the theory and shape of many types of building. The color and decorative design and the methods of painting are thoroughly described and from this one gets a most interesting point of view of Spanish painting of the period. The same may be said of the social life of the country, and even its geography. It is like the view of Rome through the keyhole of the gate of the Villa of the Knights of Malta.

The only way to get the value of the book is to read it, reread it and study it, and this is well worth while. Many a book is taken for granted on the strength of a review, but in this case it is impossible. It is well worth getting and keeping for one's self.

The descriptions of the color are so illuminating, so crisp and so simple that the photographs appear to glow as one looks at them. For example, of the beamed ceiling of the

cloister of Santo Domingo de Silos Mr. Byne says:

"Structurally the ceiling is of simple beamed form. . . . It is entirely devoid of carving, thus not tempting comparison with the oriental-looking capitals below. Painting alone was to be its embellishment: therefore even the surface of the wood received no other preparation than the preliminary coat of size and thin yeso or plaster wash.

"The process is tempera. Colors are applied flat with no modeling, nor is there any perspective in the drawing. Beam and panel-soffits are treated with conventional designs, while story-telling scenes occur only on the vertical planes such as beam-sides and frieze-board. As apparently the painting was done for the delectation of the friars, these must have been grateful for this logical arrangement, as opposed to the neck-breaking system of painting the most interesting themes on the horizontal portion thereby overhead. . . . The scale is small and would be much to the detriment of the work were it not that the covering is low and receives the light of all outdoors from the open quadrangle.

"Color scheme: Four colors only are used —red, blue, green and yellow. As in heraldic painting, no two colors were permitted to touch. The separation is accomplished by an intervening line of black or white which, where the pattern is condensed, is nothing more than a line of scoring, but which at times widens out to an inch or more, effectively treated in black and white squares, dots, or dogtooth. This same method serves to frame the little triangular scenes on the beamsides; when thus broken in contour, the frame resembles so many dominoes laid end to end. Their backgrounds are alternately red and green. This same color combination serves for the field of the soffit-panels, which are slightly set back, the reveal treated in black and white. The underside of the master-beams is green enlivened with scoring; that of the secondary tier is yellow ochre. Here the sides are Indian red and devoid of patterning."

And again, referring to the ceiling of the Infantado Palace at Guadalajara, he says:

"Structurally the ceiling is of the beamed type: its area, some thirty by forty feet square. The beams are heavy, eight by ten inches, and are set close together—only nine inches in the clear, between. The curious feature is that the place of transverse strips is taken by heavy twisted cords of gold. These, laid in pairs, divide the spaces between beams into seven long panels, filled with painted Renaissance design. The same themes are repeated on the soffits of the beams. The applied gold rosettes are of pierced Gothic carving and are irregularly placed, interrupting the design at will. Another Gothic touch is the little row of dots on the panel reveals: in fact this medieval hold-over never completely disappeared from Spanish work.

"Color scheme: The painted decoration is confined to three colors—red and black for background, silver gray for patterning. Every panel is divided lengthwise by the abrupt change from a red to a black ground, the gray design taking no note of the change. All rosettes and twisted cords are heavily gilded. The sides of the beams and the wall space between the ends are decorated with a row of little pointed arches: these, consistent with the rest of the scheme, are alternately black and red, the design within the arch always gray. The frieze is of plaster."

How I wish that the decorative painters and architects of this country—of this time —had the sense of color of the early Renaissance period. We have so many technical advantages over them, so much more technical knowledge, so much more theory, but the imagination seems to be lacking. Think of any of our best painted ceilings, in private houses, the public libraries, the apartment houses, theatres and restaurants and compare them with any of the examples in this book. The result of the comparison is pitiable.

A ceiling is the part of a room that is least insistent, yet for that very reason it gives a most delightful feeling. In an unobtrusive way it can dominate and give a subtle impression to the occupant of a room in a way that nothing else can. If, for example, a room is to be used as a background for fine paintings, tapestries, or decorative objects, a rich treatment of the ceiling will give such an impression of luxury to the room that the walls may be left absolutely plain, a perfect background for the objects to be placed against them.

WILLIAM LAWRENCE BOTTOMLEY.

New Safety Code for Elevators Now Procurable

During the past five years industrial boards and commissions in many States, the Bureau of Standards, the American Institute of Architects, insurance companies and manufacturers have coöperated with the committee of the American Society of Mechanical Engineers towards the preparation of a standardized safety code for elevators, which, it is expected, will in time be accepted as standard by every State and municipality in the country.

At the present time elevator builders must

consult city ordinances or State codes with regard to allowable speeds, factors of safety of machines, cables, sizes, safety devices permitted, size of guide rails and innumerable other details. This makes every installation practically a special order, adding enormously to cost of production and consequently to the price paid by the consumer. The nation-wide adoption of a uniform safety code in which every theoretical and practical point of construction and installation has been passed upon by exhaustive test, will be of great service to the architectural profession. Copies of the code, price 65c., may be obtained from the American Society of Mechanical Engineers, 29 West 39th St., New York.

The Architectural Record:

Inadvertently an error was made in regard to the Le Brun Scholarship Fund. The scholarship was established by Mr. Pierre L. Le Brun in 1910 and not by Mr. Michel Le Brun. Will you be kind enough to make mention of the correction in your subsequent issues.

Yours very truly,
JULIAN CLARENCE LEVI,
Chairman,
Le Brun Scholarship Committee, New York Chapter of the American Institute of Architects.

Architects and architectural draftsmen who are interested in the competition for designs of entrance and screen doors, instituted by the Victor Parting Bead Co., of Reading, Pa., are notified that the closing date has been extended until June 30th, making an additional 30 day period in which to submit designs.

International Housing Congress

The International Housing Congress will be held in Rome from September 21st to 26th. The program is given here:

1. General situation of the housing problem in the various countries, especially as regards cheap houses for the people, since the International Congress held at The Hague (September, 1913).

2. State action and intervention in order to meet the insufficiency of houses and lodgings. Special and necessary contributions and efforts to be made to make up the difference between interest on invested capital and house rent.

3. Uniformity of terminology for the purpose of facilitating statistical comparisons. Studies and reports on the most suitable means and efforts to solve the various housing problems.

4. Suggestions, communications and demonstrations concerning the various materials to be used and the selection of building systems, with a view to reducing as much as possible the cost of houses, not neglecting, however, the aesthetical feature of the house.

The Executive Committee will be very glad to receive prints, publications, drawings, etc., which will represent the best recent work in housing in this country.

The fee for membership to the Congress is 50 Italian lire. Address: Executive Committee, 101 Via del Clementino, Rome.

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THE superiority of California Redwood blocks for the flooring of factories, machine shops, warehouses, railroad roundhouses and other industrial buildings is indicated by its extensive use in many of the largest plants on the Pacific Coast.

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Redwood Block Floors Are Odorless

Redwood is free from all resinous substances and is therefore absolutely odorless. Even in plants manufacturing food products Redwood block floors can be used without danger of the manufactured product absorbing any floor odor as is the case where strong floor preservatives are necessary.

Why You Should Specify Rodd Floors of Redwood Blocks

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Under heavy traffic conditions the ends of the wood fibre iron out and form a surface that grows stronger with use. It does not crack or corrugate, does not become slippery and is comparatively noiseless.

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Good floors are as important to an industrial plant as good tracks are to a railroad. The condition and character of the floors affect the comfort and efficiency of the workers, the wear and tear on trucks and other equipment, and the injury and breakage of goods from the time they enter the plant till they leave the shipping platform.

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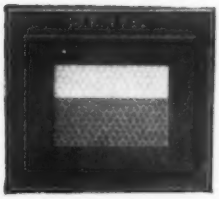

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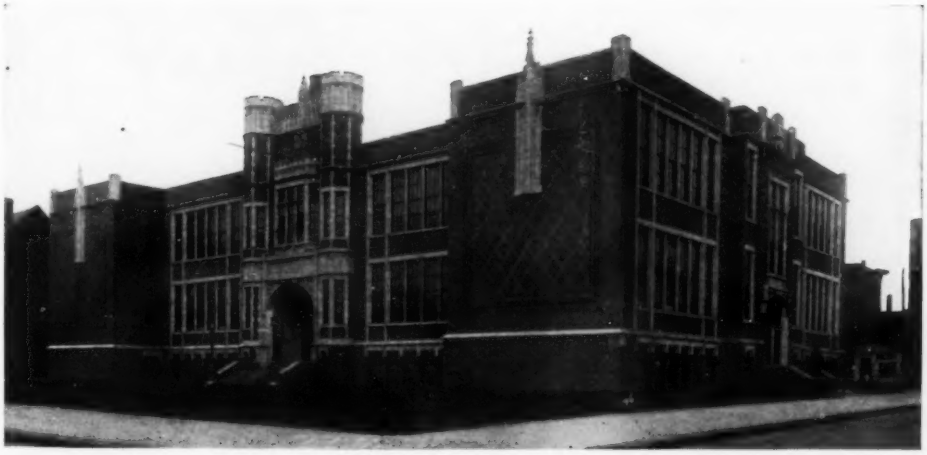

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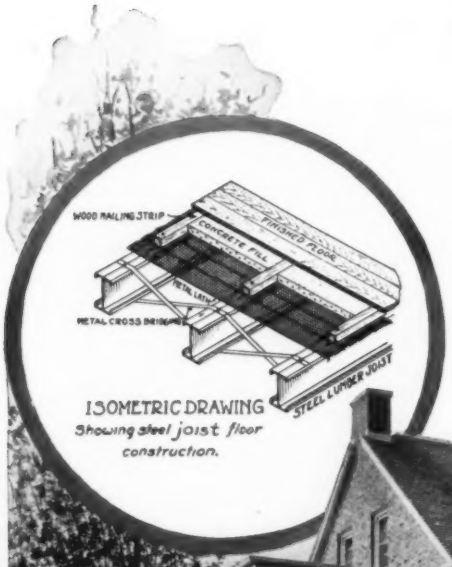
The detail drawing shows how such floors are constructed. The cost is little more than that of wood construction. National Steel Joists are carried in stock by fabricators nearly everywhere. They deliver them to the job, cut to size, to meet plans. Send for literature giving complete details.



ISOMETRIC DRAWING
Showing steel joist floor construction.

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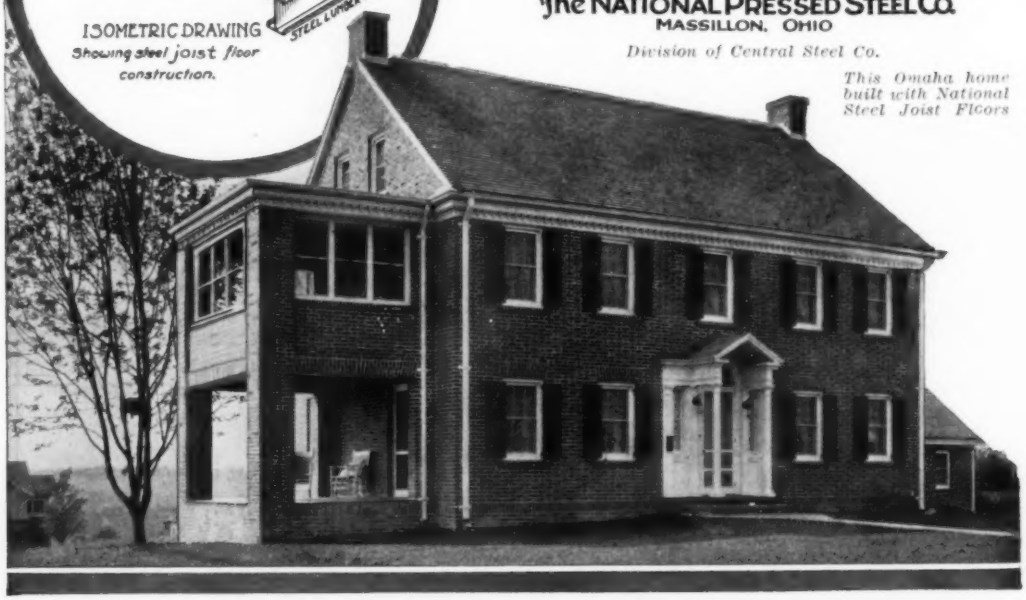
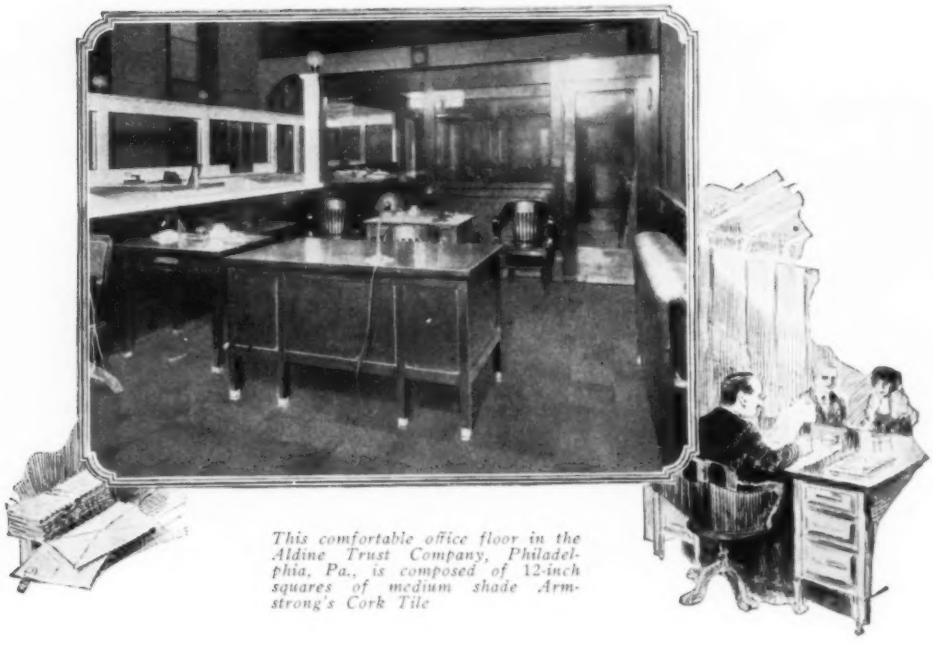


This Omaha home built with National Steel Joist Floors

NATIONAL STEEL JOISTS



This comfortable office floor in the Aldine Trust Company, Philadelphia, Pa., is composed of 12-inch squares of medium shade Armstrong's Cork Tile

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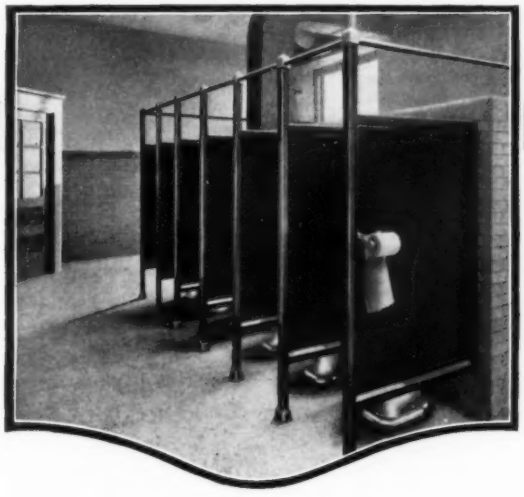

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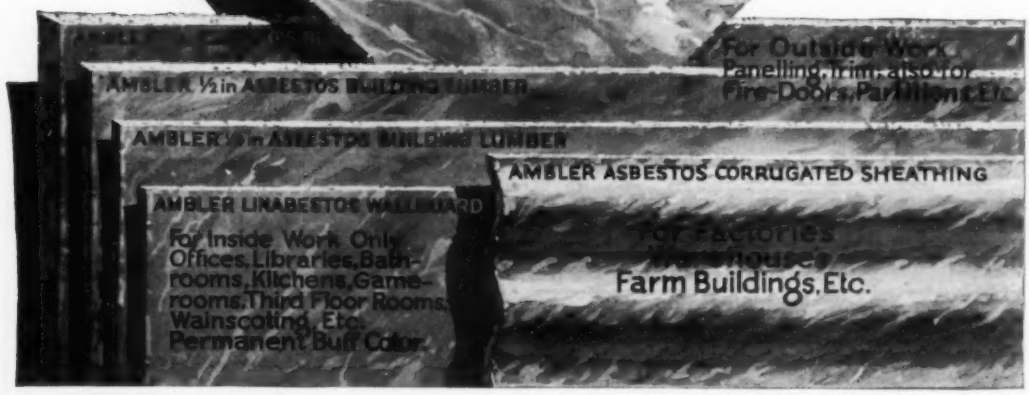

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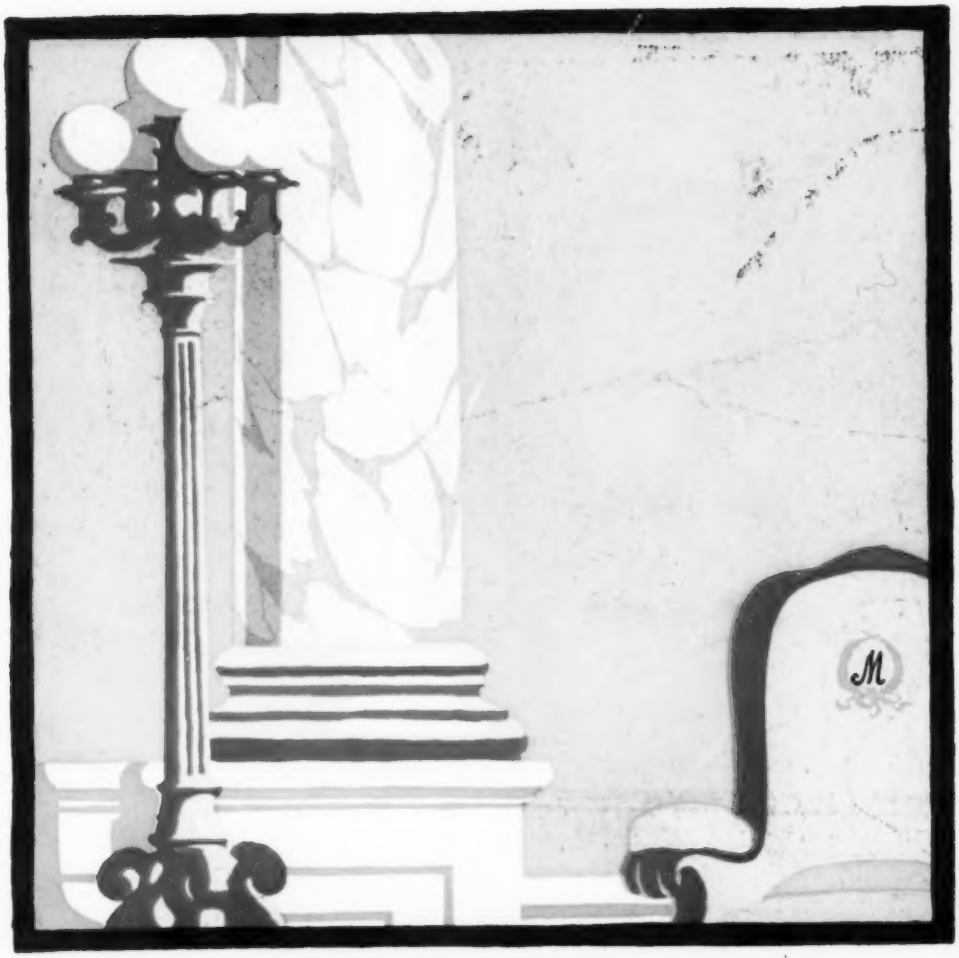

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Master Builders Company.
Sonneborn Sons, Incorporated, L.
Truscon Laboratories, The.

Floor-Tile—Pyrobar.
United States Gypsum Co.

Flooring.
Armstrong Cork & Insulation Company.
Bruce, E. L., Company.
Moulding Brick Co., Thomas.
Oak Flooring Mfrs. Assoc.

Flooring—Ceramic Mosaic.
Associated Tile Manufacturers' Association.

Flooring—Composition.
American Magnestone Corporation.
Everlasbestos Flooring Co.

Floors.
Armstrong Cork & Insulation Company.

Fountains—Wash.
Bradley Wash Fountain Co.

Furniture—Church, School, Theatre.
American Seating Company.

Furnishers.
Nelson Company, W. P., Chicago, Ill.

Garage Hardware.
McKinney Manufacturing Company.

Garden Furniture and Ornaments.
Union Metal Mfg. Co.

Gas Ranges
American Stove Company.

Glass—Window.
American Window Glass Company.

Glass—Wire.
See "Wire Glass."

Granite.
Fletcher Company, H. E.
National Building Granite Quarries Association.
Rockport Granite Company.

Hardware.
American Brass Company.
Bullard-Bodmer Company.
Corbin, P. & F.
Sargent & Company.
Soss Manufacturing Company.

Heat Insulation.
Johns-Manville, Inc.
Ric-Wil Company.

Heat Regulator Oven.
American Stove Company.

Heating Apparatus.
American District Steam Company.
American Radiator Company
Clow & Sons, James B.
Hess Warming & Ventilating Co.
Honeywell Heating Specialty Co.
Kewanee Boiler Company.
Nash Engineering Company.
Reznor Manufacturing Co.
Sturtevant Company, B. F.
Utica Heater Company.

Hinges—Gravity.
Sanymetal Products Co.

Hinges—Inviaible.
Soss Manufacturing Company.

Hoists—Ashes, Etc.
Gillis & Geoghegan.

Ice Water Systems.
Central Brass Mfg. Co.

Incinerators.
Kerner Incinerator Co.

Interior Communication System.
Automatic Electric Service Co.

Interior Decorators.
Nelson Company, W. P., New York, 209-11 West 33d Street, opposite Pennsylvania Depot; Chicago, 614 South Michigan Avenue.

Interior Trim.
See "Woods."

Iron Works—Architectural and Structural.
See Ornamental Metal Workers.

Kitchen Equipment.
Read Machinery Company.
Van Range Co., The John.

Lath—Metal.
Concrete Engineering Company.
Northwestern Expanded Metal Company.
Truscon Steel Company.

Lath Wire.
See "Wire Lath."

Lighting Equipment.
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Decorators' Supply Co.
Pearlman & Company, Victor S.
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Smyser-Royer Company.
Union Metal Mfg. Co.
Westinghouse Electric & Mfg. Co.
Wilson Corporation, J. G.

Lime.
Kelley Island Lime & Transport Company.

Limestone.
Consolidated Stone Co.
Indiana Limestone Quarrymen's Association.

Linoleum.
Blabon Company, George W.
Congoleum Company.
Nairn Linoleum Company.

Locks.
Corbin, P. & F.
Sargent & Company.

Lumber.
See "Woods."

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FROM corner-stone to cornice, the modern structures that house the nation's business are built to endure. The foundations rest on bed rock. Steel frame-work and steel girders support the weight of walls and floors. And when they are ready to be roofed the great majority of them are covered with Barrett Specification Roofs.

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That they are *bonded* against maintenance expense. Barrett Inspection Service *during construction* insures strict compliance with the roofing specifications, and a Surety Company Bond absolutely protects the owner from all roof repair during the bonded period.

That moderate first cost and guaranteed freedom from maintenance make them the most economical roofs it is possible to build.

That they provide a degree of fire protection not exceeded by any other roof. They always take the base rate of fire insurance.

The Barrett Specification Type "AA" 20-Year Bonded Roof represents the most permanent roof covering it is possible to construct, and while we bond it for twenty years only, we can name many roofs of this type that have been in service over forty years and are still in good condition.

Where the character of the building does not justify a roof of such extreme length of service, we recommend the Barrett Specification Type "A" Roof, bonded for 10 years. Both roofs are built of the same high grade materials, the only difference being in the quantity used.

A Surety Company Bond, absolutely protecting the owner from maintenance expense, is issued free of charge on Barrett Specification Roofs of 50 squares or larger, in towns of 25,000 or more, *and in smaller places where our inspection service is available.*

Copies of The Barrett Specifications sent free on request

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American Steel & Wire Company.
Copper & Brass Research Assoc.
Mineral Point Zinc Co.
New Jersey Zinc Company.
Rome Brass & Copper Company.
Taunton-New Bedford Copper Co.

Metal Extruded.
American Brass Company.
Chase Companies.
Rome Brass & Copper Co.

Metal Lath.
See "Lath Metal."

Metal Lumber.
Berger Manufacturing Co.
National Pressed Steel Company.
North Western Expanded Metal Co.
Truscon Steel Company.

Mirrors—Lavatory.
Hess Warming & Ventilating Co.

Mortar
Louisville Cement Co.

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American Brass Company.
Chase Companies.
Rome Brass & Copper Company.

Mouldings—Extruded Bronze.
American Brass Company.
Chase Companies.

Organs—Residence.
Estey Organ Company, The.

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Smyser-Royer Company.
Stewart Iron Works Co.
Williams, Inc., John.

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Barrett Company.
Berry Brothers.
Marietta Paint & Color Co.
Patton Paint Company.
Pecora Paint Company.
Pitcairn Varnish Company.
Ric-Wil Company.
Ripolin Company, The.
Sherwin-Williams Co.
Truscon Laboratories, The.
U. S. Gutta Percha Paint Co.
Wadsworth Howland & Co.
Wilson Corporation, J. G.

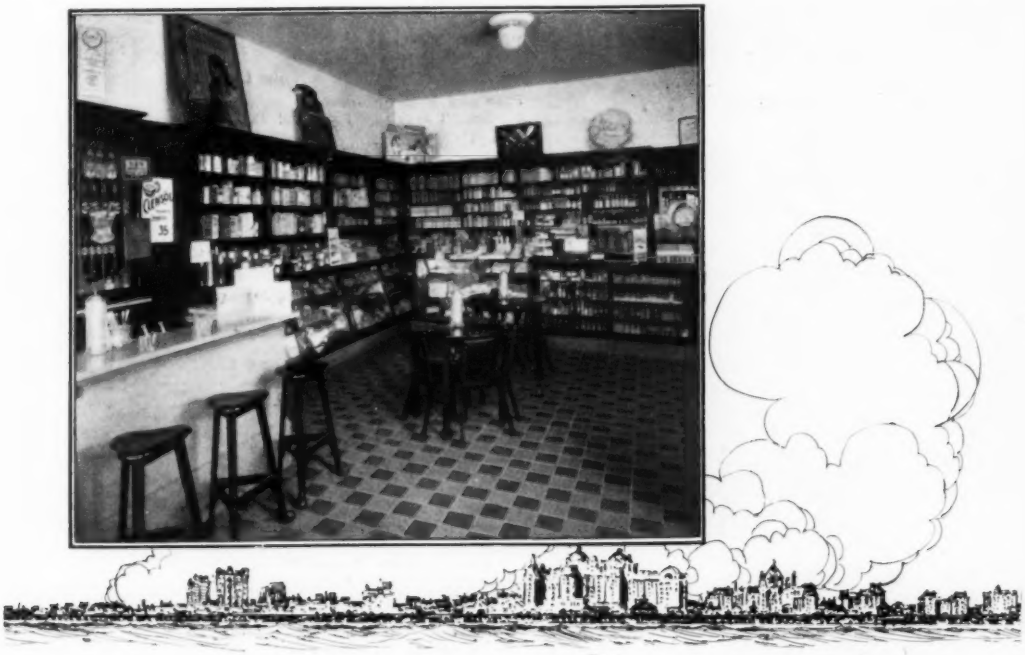
Partitions—Office.
Empire Steel Partition Co.
Sanymetal Products Co.
Wilson Corporation, J. G.

Partitions—Toilet.
Hughes-Keenan Company.
Sanymetal Products Co.
Weis, Henry, Mfg. Co.

Pencils—Drawing.
American Lead Pencil Company.
Faber, Eberhard.

Pergolas.
Union Metal Mfg. Company.

Pipe—Brass and Copper.
American Brass Company.
Bridgeport Brass Company.
Chase Companies.
Rome Brass & Copper Company.



The attractive Blabon floor of genuine inlaid Linoleum in this Atlantic City Drug Store resists the wear of thousands of feet season after season at the popular seashore resort.

The real test of a floor

Ability to stand-up under years of constant tread of feet proves a floor's practical value, of course.

A Blabon floor of plain or inlaid linoleum goes farther than that. Continued use proves that its beauty lasts as long as the linoleum itself, because the designs and colorings go through to the burlap back.

For permanent floors in public and semi-public buildings as well as in private residences, these two qualities make a strong appeal. And that isn't all—a Blabon floor is quiet to the tread, sanitary, easy to keep clean, adapted to fireproof construction, and economical in up-keep.

Blabon plain or inlaid linoleum when cemented down becomes an integral part of the building.

We will mail you, upon request, our reprint from Sweet's Architectural Catalog, and our book of quality samples.

IMPORTANT NOTICE: Floor coverings (including rugs) made upon a felt paper base are not linoleum, and to describe, advertise or sell them as linoleum is a violation of the law. Felt paper floor coverings have a black interior which is easily detected upon examining the edge.

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Youngstown Sheet & Tube Company.

Pipe and Boiler Covering.
See "Covering—Pipe and Boiler."

Pipe-Joint Compound.
Johns-Manville, Inc.

Plumbing Fixtures.
Central Brass Mfg. Company.
Crane & Company.
Fairfacts Company, The.
Haas Company, Philip
Hoffman & Billings Manufacturing Company
Hughes-Keenan Co.
Johns-Manville Company, H. W.
Maddock's Sons Co., Thomas.
Sanymetal Products Company.
Structural Slate Company.
Victor Brass Manufacturing Company

Poles—Steel.
Pole & Tube Works, The.

Preservatives—Wood.
Barrett Company, The.

Publishers.
Harvard University Press.
Sweet's Catalogue Service, Inc.

Pumps.
Nash Engineering Company.

Radiators.
Clow & Sons, James B.
Kewanee Boiler Company.
Smith Company, H. B., The.

Railings.
Anchor Post Iron Works.
Sanymetal Products Co.
Stewart Iron Works Co.
Wickwire Spencer Steel Corporation.

Refrigerators.
Delco Light Co.
McCray Refrigerator Company, The.

Roof Cement.
Barrett Company, The.
Johns-Manville, Inc.

Roofing.
Asbestos Shingle, Slate & Sheathing Co
Barrett Company, The.
Carey Manufacturing Company, Philip
Johns-Manville, Inc.
Truscon Steel Company.

Roofing Copper.
American Brass Company.
Copper & Brass Research Assoc.
Taunton-New Bedford Copper Co.

Roofing Slates.
See "Slates—Roofing."

Roofing Tin.
Taylor Company, N. & G.

Sash and Frame—Window.
See "Windows."

Sash—Steel.
Detroit Steel Products Co.
Truscon Steel Company

Sash Chain.
See "Chain Sash."

Schools and Colleges.
Pennsylvania Academy of Fine Arts.

Screens.
Higgin Manufacturing Co.

Seating—Church, School, Theatre.
American Seating Company.

Sheathing.
Barrett Company, The.
Bishopric Manufacturing Co.
Johns-Manville, Inc.

Shingle Stains.
Creo-Dipt Company.
Parker-Preston Company.

Shingles.
Asbestos Shingle Slate & Sheathing Co.
Barrett Company, The.
Creo-Dipt Company.
Johns-Manville, Inc.

Showers.
Hoffman & Billings Mfg. Company

Shutters—Steel, Rolling.
Wilson Corporation, J. G.

Skylights.
Drouve Co., The G.

Slate Blackboards.
Knickerbocker Slate Corporation.

Slate Roofing.
Auld & Conger Company.
Knickerbocker Slate Corporation.
Rising & Nelson Slate Company.
Structural Slate Company.
Vendor Slate Company.

Slate—Structural.
Knickerbocker Slate Corporation.

Slate Surfacing.
Blue Ridge Slate Corporation.

Smoke Screens.
Sanymetal Products Co.

Sound Deadening.
Barrett Company, The.
Johns-Manville, Inc.

Stains.
See "Paints."

Steel Lumber.
See "Metal Lumber."

Steel and Wire Products.
American Brass Company.
American Steel & Wire Company.
Chase Companies.
National Steel Fabric Co.

Stone—Artificial.
Rackle & Son Co., The George.

Store Front Construction.
Zouri Drawn Metals Co.

Stucco.
American Magnestone Corporation.
American Materials Co.
Art Stucco Materials Co.
National Kellastone Company.
North West Materials Co.
Wisconsin Lime & Cement Co.

Switches—Electric.
Arrow Electric Company, The.
Hart & Hegerman Mfg. Company.
Westinghouse Electric & Mfg. Co.

Terra Cotta.
National Terra Cotta Society.

Tile Floor and Wall.
Armstrong Cork & Insulation Co.
Associated Tile Manufacturers.
Rookwood Pottery Co.

Tile Roofing.
Truscon Steel Company.

Treads—Safety.
American Mason Safety Tread Co.

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Tubes—Brass and Copper.
American Brass Company.
Chase Companies.
Rome Brass & Copper Company.

Vacuum Cleaning Machines.
Spencer Turbine Company.
Sturtevant Company, B. F.
United Electric Company.

A Sensible and Businesslike Document

Publication No. K-300, "Basic Specification," permits a very brief specification to cover almost any Tile installation.

This document, 7½ x 10⅝ inches in size, was especially prepared to serve as a record to which architects may conveniently refer, under Tilework, in issuing their own specifications.

"BASIC SPECIFICATION"

There are four related documents, all available in drafting a specification for each Tile installation. These include:

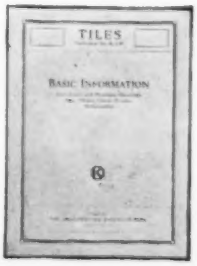
Schedules for Tilework and for accessories.

Specificational paragraphs suggested for re-writing into the architect's own specification.

Paragraphs for suggested modifications of the Basic Specification.

Paragraphs relating to structural features incident to Tile installation in the work of other trades.

Publication No. K-200—"Basic Information"—is another document prepared for the architect's use, embracing such subjects as Ingredients and Processes, Gradings, Sizes, Shapes, Colors, Finishes and Nomenclature. Tiles are grouped and described, with illustrations. Plates of drawings show relative proportions and classifications.



The documents here described are typical of the co-operative service which The Associated Tile Manufacturers are prepared to give. All of these publications, including several not here mentioned, are designed to accomplish the satisfactory use of Tiles in the most economical way.

The Associated Tile Manufacturers

Beaver Falls, Pa.

Our Swimming Pool book has supplied the fundamental data for the construction of many of the finest pools. This has been credited by architects with being the most comprehensive work on this subject. Like other publications here mentioned, copies will be sent on request.

Valves.
American District Steam Company.
American Radiator Company
Central Brass Mfg. Co.
Crane Company.
Gorton & Lidgerwood Company.
Haas Company, Philip.
Jenkins Brothers.

Varnish.
Barrett Company, The.
Berry Brothers.
Pitcairn Varnish Company.
Smith & Co., Edward.
Truscon Laboratories, The.
U. S. Gutta Percha Paint Co.

Ventilators.
Edwards Manufacturing Company.
Globe Ventilator Company.
Ilg Electric Ventilating Co.
Ohio Body & Blower Company.
Sturtevant Company, B. F.

Wall Board
Asbestos Shingle, Slate & Sheathing Co.

Wall Covering.
Standard Textile Products Co.

Wardrobes.
Wilson Corporation, J. G.

Wash Fountains.
Bradley Wash Fountain Co.

Water Heaters.
Excelso Water Heater.
Hoffman Heater Company.

Waterproof Materials.
Barrett Company, The.
Carey Company, The Philip.
Johns-Manville, Inc.
Master Builders Company.
Sandusky Cement Company.
Sonneborn Sons, Incorporated, L.
Truscon Laboratories, The.
Truscon Steel Company.
Wadsworth, Howland & Company

Window-Fixtures.
International Casement Co., Inc.
Kawneer Company, The
Zouri Drawn Metals Co.

Windows.
Detroit Steel Products Co.
Higgin Manufacturing Co.
Hoffman Mfg. Co., Andrew.
International Casement Co., Inc.
Kawneer Company, The
Reliance Fireproof Door Company.
Truscon Steel Company.
Williams Pivot Sash Company.

Wire and Cable.
American Brass Company.
American Steel & Wire Company.
Chase Companies.
Simplex Wire & Cable Co.

Wire Glass.
Mississippi Wire Glass Company.

Wire Lath.
National Steel Fabric Co.
Wickwire-Spencer Steel Corp.

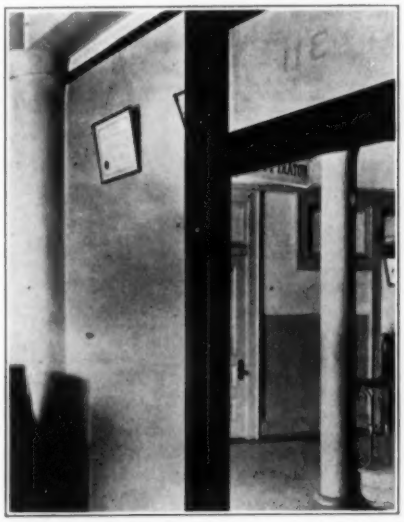
Wire Rope.
American Steel & Wire Company.

Wood Preservative.
Barrett Company, The.

Woodwork.
Curtis Co.'s Service Bureau.

Woods.
American Walnut Manufacturers' Association
Arkansas Soft Pine Bureau.
Bruce, E. L., Company.
Long-Bell Lumber Company.
Mahogany Association.
Morgan Woodwork Organization.
Oak Flooring Mfrs. Assoc.
Pacific Lumber Company, The.
Stearns, A. T., Lumber Company.

Zinc.
See Metal



Moore Building, San Antonio. Partitions are made of 27-gauge Kno-Burn with channels 12″ on centers.

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solid partitions—they save wonderfully in space, about 1 square foot to every 50 in an average size room, as compared with hollow block construction.

Solid partitions are becoming a factor of such importance in certain types of buildings—hotels, hospitals, schools, etc., that makers of electrical equipment are now making equipment so shallow that it will not unreasonably extend beyond the plastered surface.

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SKETCH COMPETITION
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RECENT PUBLICATIONS *of* ARCHITECTURAL INTEREST

Under this heading is listed a selection of (1) new catalogues, monographs and reports published by manufacturers, manufacturers' associations, technical societies, educational institutions and government departments, and (2) books on architecture and the allied arts. The manufacturers' publications may be secured by architects from the firms who issue them free of charge except where otherwise noted.

ACOUSTICS. No. 1. Quieting Treatment for Banks, Offices, etc. No. 2, Data on Architectural Acoustics from Edwin H. Barton, D. Sc., F.R.S., Etc. Union Acoustical Co., 624 Tremont Bldg., Boston, Massachusetts.

AIR CONDITIONING. Illustrated Bulletin No. 23. The Bayley Turbo-Atomizer, the Bayley Turbo Air Washer and Air Conditioner. The Bayley Manufacturing Company, 732-760 Greenbush Street, Milwaukee, Wisconsin. 7¾x10½ in. 32 pp. Illustrated.

CASEMENTS. Hope's Steel Casements in Standard Types & Sizes. Henry Hope & Sons, 103 Park Avenue, New York. 6x10 in. 8 pp. Illustrated.

CONCRETE. Investigation & Report on Concrete House Construction. Security Cement & Lime Company, Hagerstown, Maryland. 8½x11 in. 37 pp. Illustrated.

COPPER. Copper, its effect upon Steel for Roofing Tin. American Sheet and Tin Plate Company, Frick Building, Pittsburgh, Pennsylvania. 8½x11 in. 28 pp. Illustrated.

COPPER. "How to Build a Better Home." Copper & Brass Research Association, 25 Broadway, New York. 8x10¾ in. 30 pp. Illustrated.

DAMP PROOFINGS, WATERPROOFINGS, ETC. Architects' Specification Hand Book, new and revised edition. The Truscon Laboratories, 1626 Caniff St., Detroit, Michigan. 8½x11 in. 104 pp. Illustrated. De Luxe binding.

FINISHES, WALL. Specifications for Producing CRAFTEX Wall Finishes. Simmons, Gardner Company, 7 Water Street, Boston, Massachusetts. 8½x11 in. 4 pp.

FIXTURES, LIGHTING. The Rush White China Porcelain Lighting Fixtures. Catalog No. 7. Rush Brothers Company, 1924 Archer Avenue, Chicago, Illinois. 8¼x9½ in. 24 pp. Illustrated.

FLOORING. Bloxonend Flooring. Carter Bloxonend Flooring Co., Long Building, Kansas City, Missouri. 3¼x6 in. 20 pp. Illustrated.

FLOORING. Dreadnaught Interlocked Flooring—A Compound of Cork. Dreadnaught Flooring Company, New York. 7x6 in. 24 pp. Illustrated in color.

FURNITURE. Garden Furniture. North Shore Ferneries Company, Beverly, Massachusetts. 14x10 in. 18 pp. Illustrated.

HARDWARE. Coburn Sliding Door Hardware. Catalog & Price List No. 100. Coburn Trolley Track Mfg. Co., Holyoke, Massachusetts. 8½x11 in. 48 pp. Illustrated.

HARDWARE. Wagner Garage Door Equipment in Sets with Cloztite Hangers. Wagner Mfg. Co., Cedar Falls, Iowa. Catalog No. G-21. 7¾x10¾ in. 16 pp. Illustrated.

HARDWARE. Catalog No. 90. Allith-Prouty Company, Danville, Illinois. 7¾x10½ in. 144 pp. Illustrated.

LEAD. Hoyt Hardlead Products for Buildings. United Lead Company, 111 Broadway, New York. 6x9 in. 24 pp. Illustrated.

LIGHTING, ELECTRIC. Exterior Lighting Fixtures—Catalog "H." Smyser-Royer Co., York, Pennsylvania. 8½x11 in. 96 pp. Illustrated.

LOCKS, ELEVATOR. M-C-K Automatic Mechanical Safety Elevator Locks. Elevator Locks Co., Peoria, Illinois. 4¼x9¼ in. 28 pp. Illustrated.

MORTAR. Brixment, the Perfect Mortar. Louisville Cement Company, Louisville, Kentucky. 5½x7¾ in. 16 pp. Illustrated in color.

PLAN FILING. Economy Plan Filing Equipment, for Tracings, Blue Prints and Drawings. Economy Drawing Table & Mfg. Co., Adrian, Michigan. 7x10 in. 4 pp. Illustrated.

REFRIGERATION. The Science of Safety Refrigeration. Automatic Carbonic Machine Co., Peoria, Illinois. 7x10 in. 30 pp. Illustrated.

ROOFING. Anaconda Roofings—Data and Directions. Anaconda Copper Mining Company, Metal Roofing Department, 25 Broadway, New York. 8½x11 in. 4 pp.

ROOFING. Details for Tin Roofing and Sheet Metal Work. American Sheet & Tin Plate Company, Frick Building, Pittsburgh, Pennsylvania. 8¼x10¾ in. 8 pp. Illustrated.

SLATES. Agecraft Slates of Quality. The Auld & Conger Company, Bangor Building, Cleveland, Ohio. 6¼x9½ in. 4 pp. Illustrated in color.

STUCCO. American Magnestone. American Magnestone Corporation, Springfield, Illinois. 8½x11 in. 14 pp. Illustrated.

STUCCO. Asbestone Everlastic Magnesite Stucco. Franklyn R. Muller & Co., Waukegan, Illinois. 4x9 in. 24 pp. Illustrated.

TABLES, DRAWING, ETC. Economy Drawing Tables and Sectional Filing Cases. Catalog N. Economy Drawing Table & Mfg. Co., Adrian, Michigan. 7x10 in. 32 pp. Illustrated.

TEMPERATURE REGULATION. Electrically Operated Temperature Regulating Systems. Gold Car Heating & Lighting Co., Bush Terminal, 220 36th St., Brooklyn, N. Y. 8½ x11 in. 32 pp. Illustrated.

TERRA COTTA. Atlantic Terra Cotta Bulletin, Vol. V, No. 1. The Ospedale Maggiore, Milan. Atlantic Terra Cotta Company, 350 Madison Avenue, New York. 8½x11 in. 20 pp. Illustrated.

TILE. Mueller Tile—Faience & Flemish Tiling. Mueller Mosaic Co., Trenton, New Jersey. 6x9 in. 32 pp. Illustrated.

Received from the Publishers

The Electric Lighting of Shop Windows, by G. K. Fletcher. A simple guide for shopkeepers and window-dressers. London: Benn Brothers, Ltd., 1921. 38 p. illus. 8°. Price, 5s.

"The first object is to explain in simple language why many windows are badly lighted, and to explain in equally simple language how they could be improved without great expense."—Preface.

A Grammar of Color, by T. M. Cleland. Arrangements of Strathmore papers in a variety of printed color combinations according to the Munsell color system, with an introduction by Professor A. H. Munsell and explanatory text and diagrams illustrating the application of the system to work in the graphic arts by T. M. Cleland. Mittineague, Mass.: Strathmore Paper Co., 1921. 28 p. illus. 4°.

This quarto volume with its artistic make-up "presents a system for the measurement of color and for its orderly use, and demonstrates this system upon a number of cover papers selected from the extensive Strathmore lines. The fact should be emphasized that neither the Munsell color system nor this exposition of it is intended to present a creed or dogma for the use of color, nor to supplement the exercise of instinct and trained perception. It is intended as an aid to the training of a color perception and the quickening of an instinct for color."

Blue Printing and Modern Plan Copying; for the engineer and architect, the draughtsman and the print-room operative. By B. J. Ball. New York: Sir Isaac Pitman & Sons, Ltd., 1921. ix, 130 p. illus. 8°. Price, $2.00.

"The book is written in three main sections. The first deals with the capabilities of contact photography and allied processes for plan copying, and the precautions which should be taken in the preparation of plans in order to secure speedy, economical and satisfactory results. The second describes the various types of plant which have found favor in this country. The third deals with the layout of photo-printing rooms and the manner and methods of working."—Preface.

A History of Greek Mathematics, by Sir Thomas Heath. Oxford: The Clarendon Press, 1921. 2v. 8°. Price, £2 10s.

Anyone who has liked high school geometry will probably enjoy the greater part of these two carefully written volumes. Unlike Cantor's great work, the arrangement is by subjects rather than chronological. The introduction recites in an interesting way the conditions which favored the development of philosophy and mathematics among the Greeks. Then follow chapters on Greek numerical notation and arithmetical operations; Pythagorean arithmetic; the earliest Greek geometry; Pythagorean geometry; progress down to Plato's time; special problems, such as squaring the circle, trisection of the angle, and duplication of the cube; Zeno; Plato; Plato to Euclid; Euclid; Aristarchus of Samos; Archimedes (an especially interesting chapter); conic sections; the successors of the great geometers; celebrated handbooks; trigonometry; mensuration, with an account of Heron of Alexandria, Papus of Alexandria; algebra; commentators and Byzantines. Has an index of Greek words used.

Sewerage and Sewage Disposal, by Leonard Metcalf and H. P. Eddy. A textbook. New York: McGraw-Hill Book Co., 1922. xiv, 598 p. illus. 8°. Price, $5.00.

A single volume abridgment of the authors' American sewerage practice, published in 3v. during 1914 and 1915. Although the work reflects the engineer's, rather than the teacher's viewpoint, it is intended for class use in engineering schools. Completely illustrated and closely indexed.

Simplified Methods of Calculating Reinforced Concrete Members, by W. Noble Twelvetrees. London and New York: Sir Isaac Pitman & Sons, Ltd., 1921. x, 72 p. 2 ed. rev. and enl. diagrs. 8°. Price, $1.50.

"The present edition is of wider scope than its predecessor, as it covers simplified methods of calculation for beams, compression members, and members subject to combined stresses. The notation throughout is in accordance with the New Standard Notation approved by the Concrete Institute on 14th of April, 1920, and all equations are expressed in standard forms."—Preface.

Sketches of Early American Architecture, by O. R. Eggers, by William H. Crocker. New York: The American Architect, 1922. 9x12⅛ inches. xix. 56 plates. Price, $6.00.

The work of O. R. Eggers. A collection of superb reproductions of pencil renderings of early colonial work in the Eastern cities of the United States. Although each presentation has a uniform vigor in presentation, the subjects have a variety of interest for the architectural designer because of excellent design material and rendering. Text pages, containing monographs descriptive of this series, accompany the portfolio, and relate the history, and describe the work of architecture from which the sketches were made. The pencil drawings are remarkable for excellent handling and presentation.

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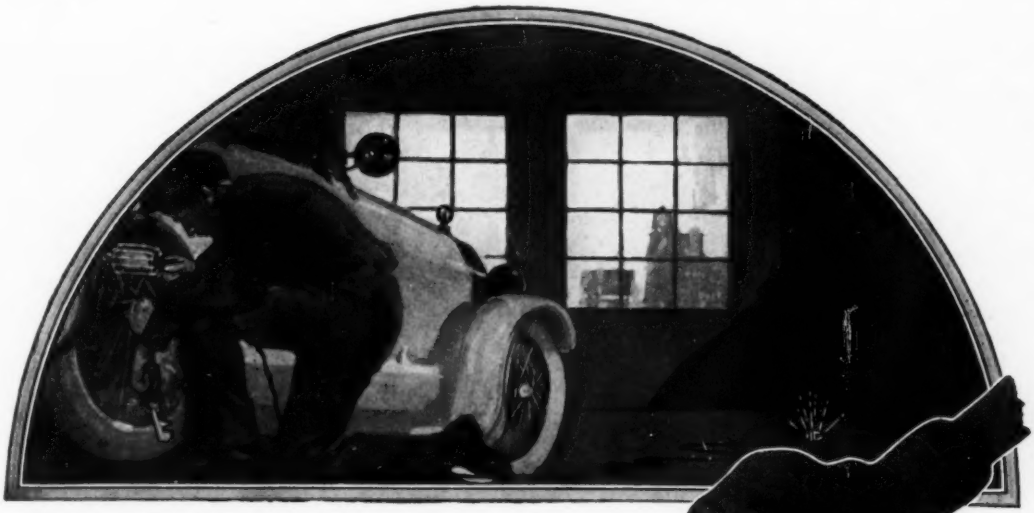

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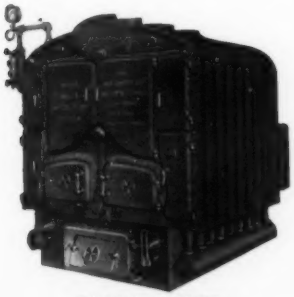

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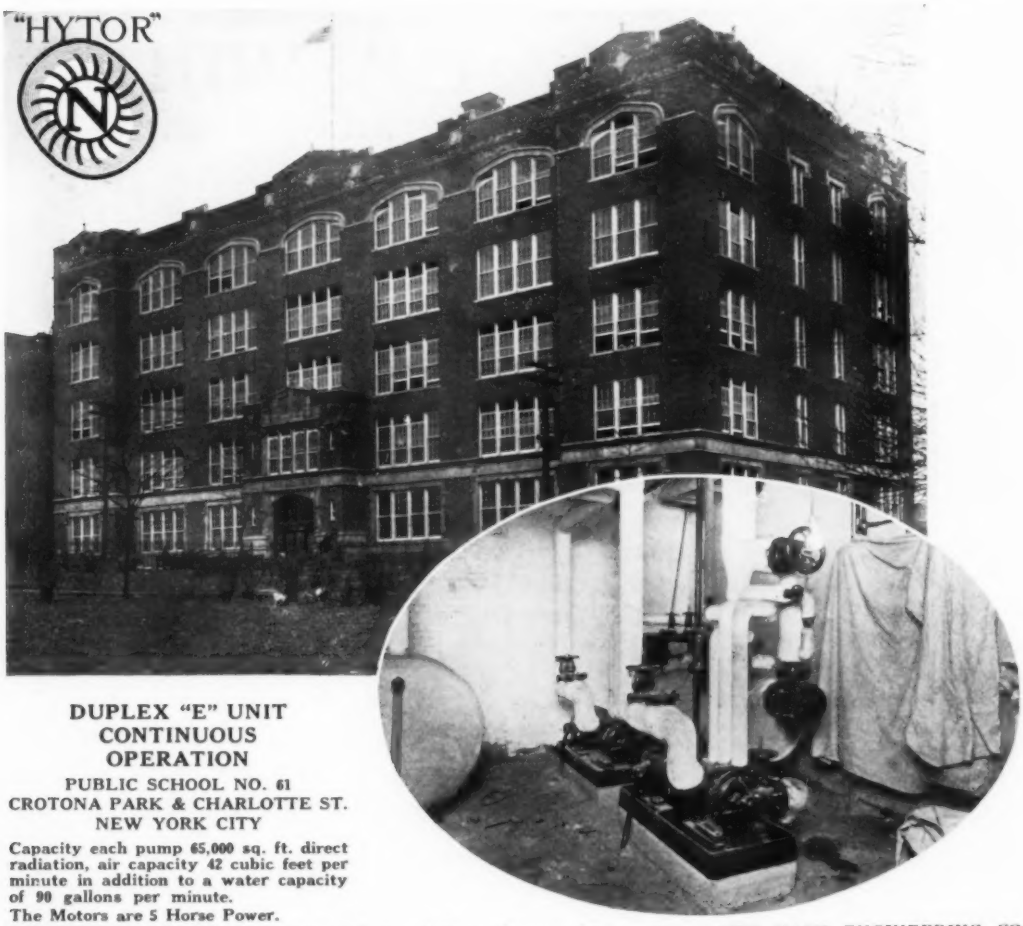

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The ARCHITECTURAL RECORD

Vol. LI No. 6 — JUNE, 1922 — Serial No. 285

CONTENTS

COVER—Water Color by Leon V. Solon.

PUBLISHED MONTHLY BY

THE ARCHITECTURAL RECORD COMPANY

115-119 WEST FORTIETH STREET, NEW YORK

T. S. MORGAN, Pres. M. A. MIKKELSEN, Vice-Pres.
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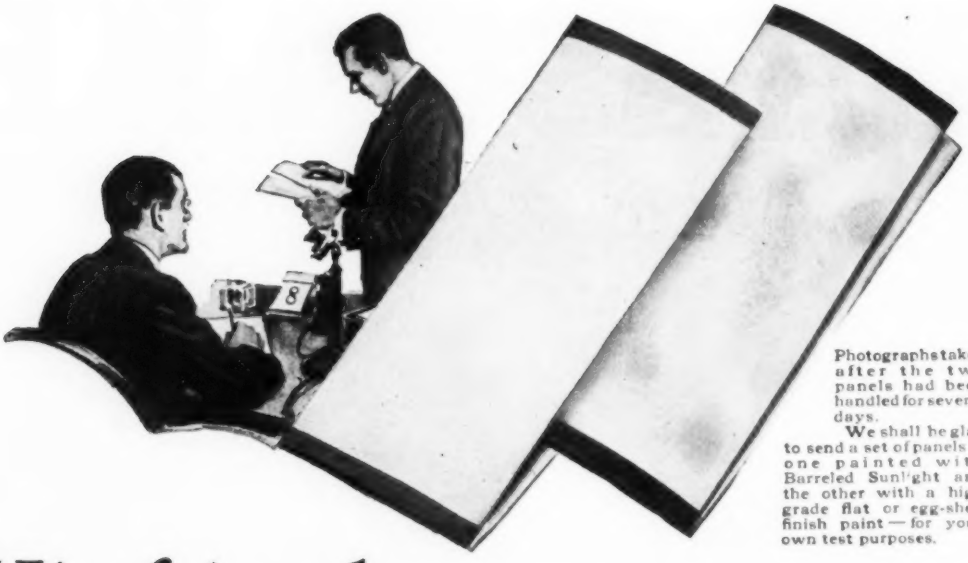

Photographs taken after the two panels had been handled for several days.

We shall be glad to send a set of panels—one painted with Barreled Sunlight and the other with a high grade flat or egg-shell finish paint—for your own test purposes.

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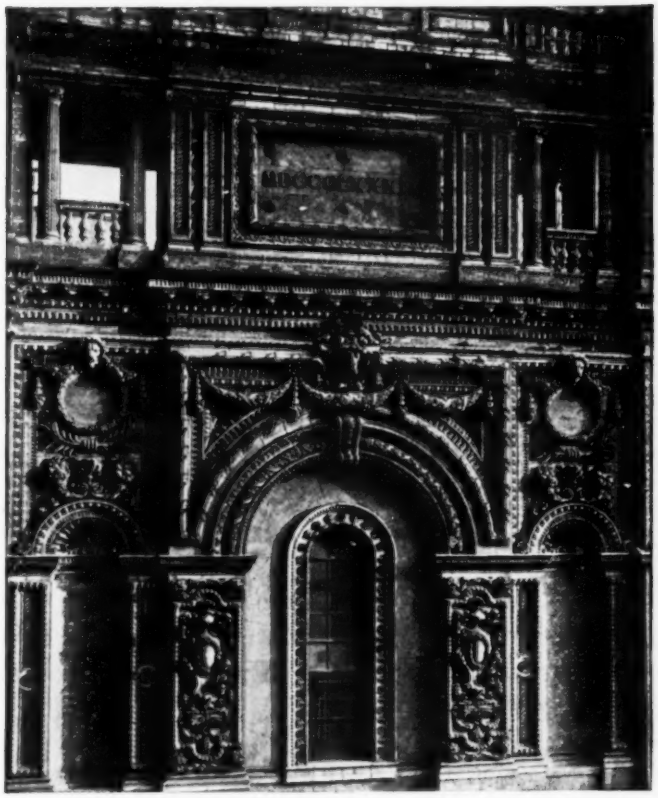

Detail of Terra Cotta construction and ornament, Madison Square Garden, New York City, McKim, Mead and White, Architects.

Unretouched photo showing condition of Terra Cotta, March 1st, 1922

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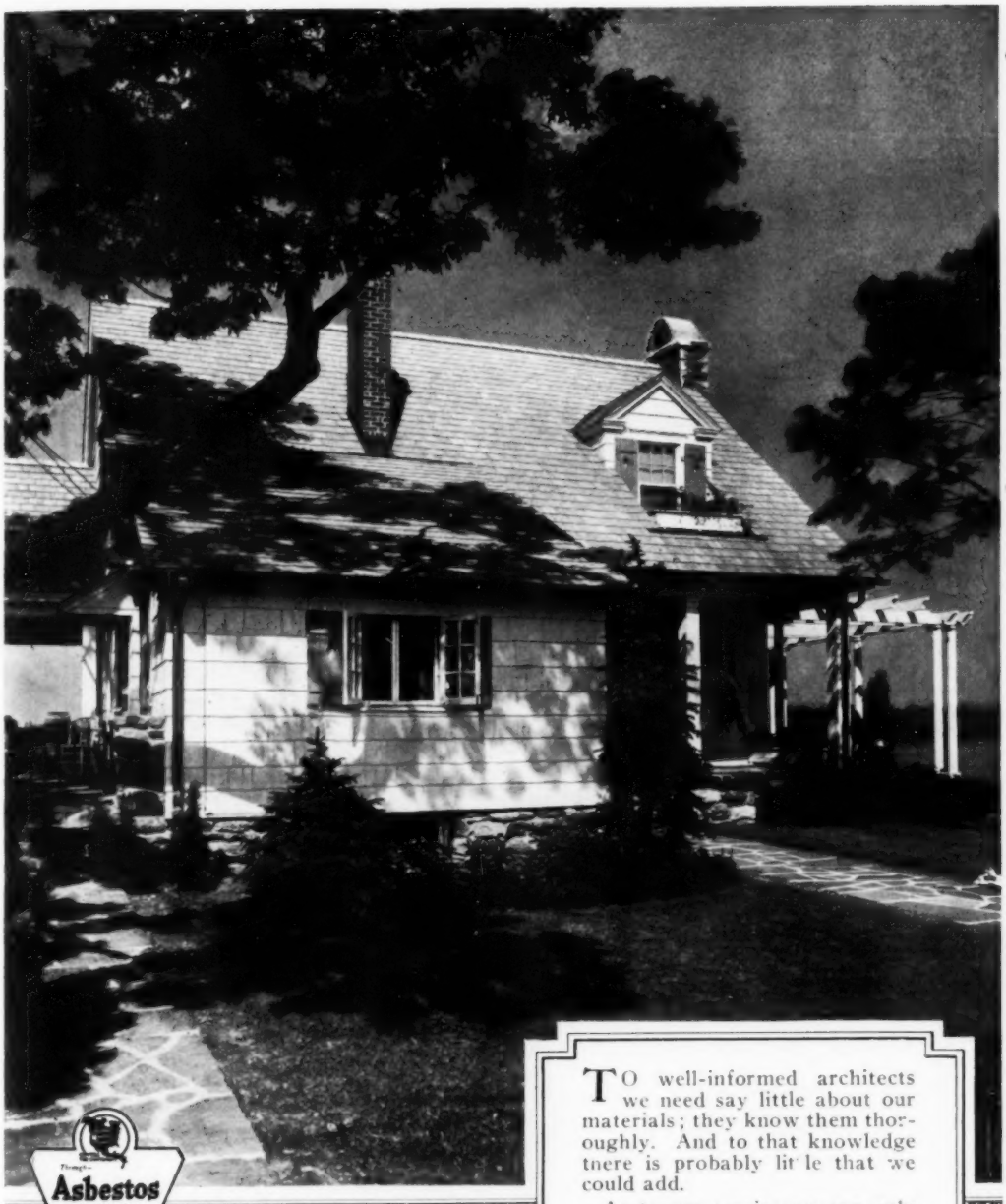

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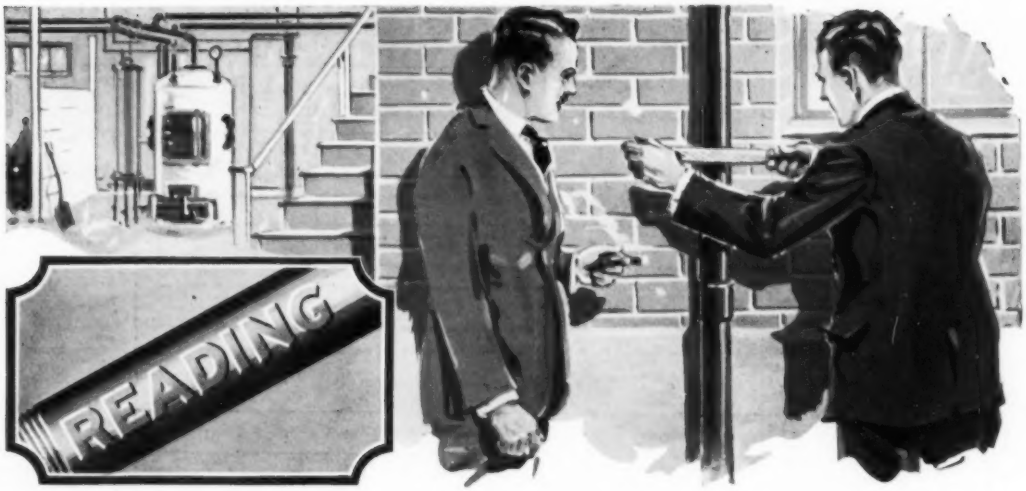

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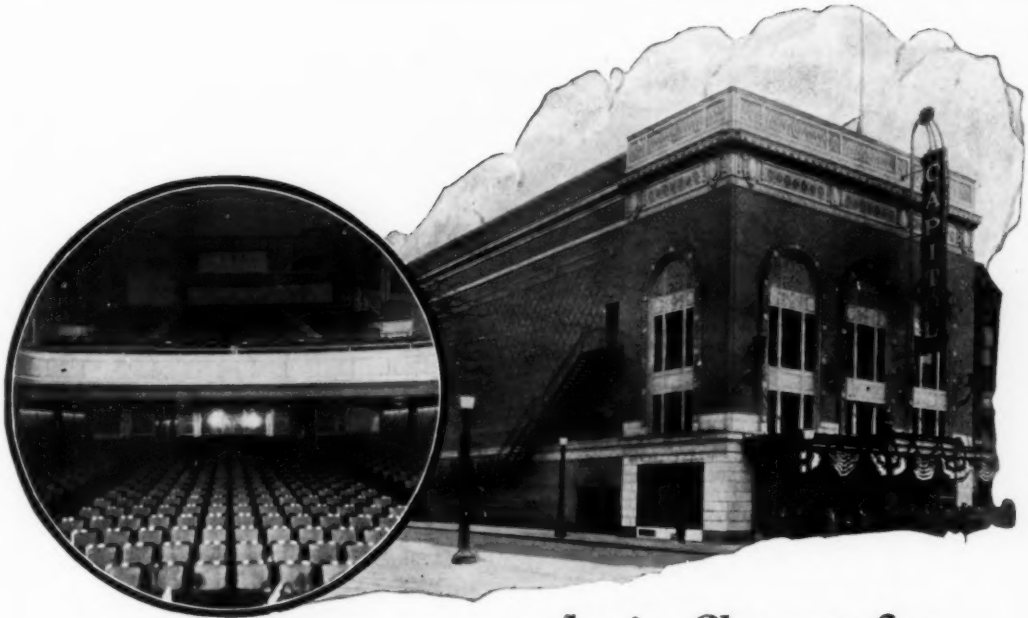

Capitol Theatre, Youngstown, Ohio, remodeled from old Y. W. C. A. building under the direction of Stanley and Scheibel, architects, Youngstown; Charles Shutrump & Sons, general contractors, Youngstown; Dougherty & Brennan, plastering contractors, Youngstown.

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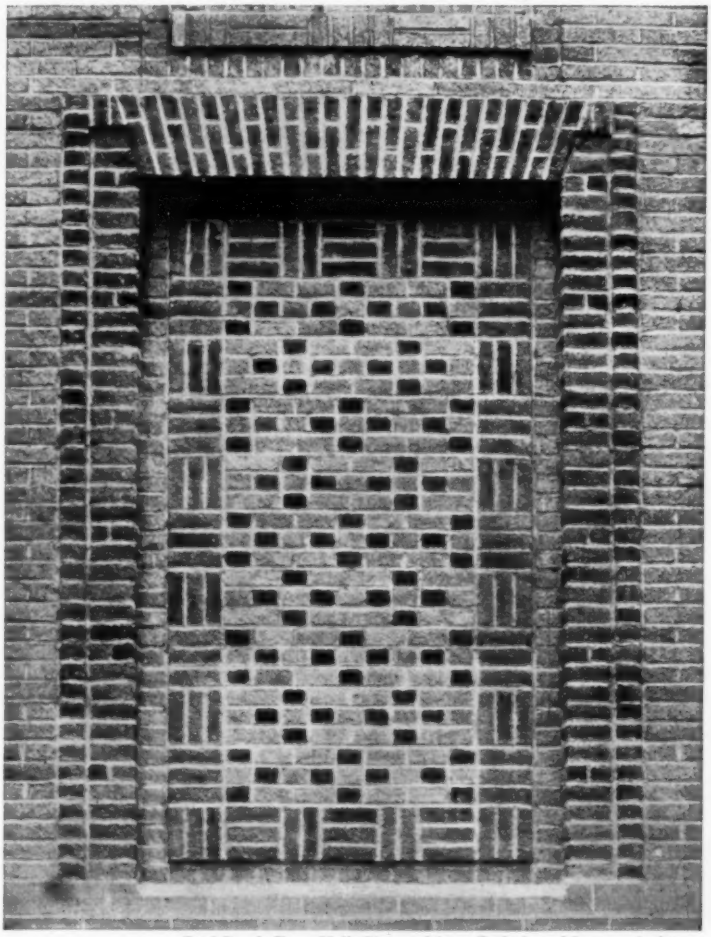

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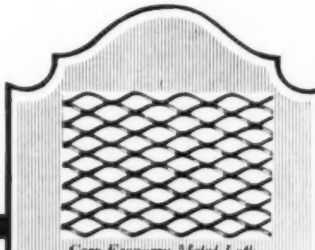
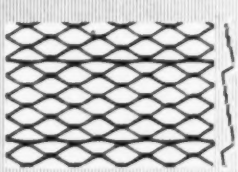
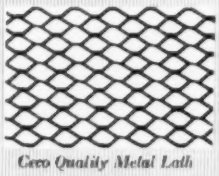


Ceco Economy Metal Lath



Ceco Self-Furring Metal Lath



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Too often inferior material is used because it is the only material available without delay. Avoid both, by specifying Ceco Lathing Materials. Our several warehouses, all completely stocked, with thorough distribution among building supply dealers, assures immediate deliveries.

Much Depends Upon Skillful Erection

To make sure that Ceco Lathing Materials are properly erected our Handbook "How To Use Ceco Lathing Materials", gives specifications and details for every kind of work—our own experience—chuck full of practical information. To make doubly sure you get results that should be obtained, our own lathing organization will install our materials where the quantity is large enough to warrant it.

It is to your advantage to use Ceco Lathing Materials and our Lathing Service. It reaches from factory to the job. Send for our Handbook.

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OMAHA

CHICAGO - DETROIT - OMAHA - MILWAUKEE
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Ceco PRODUCTS for Permanent Building
CONCRETE REINFORCING MATERIALS AND FORMWORK
FIREPROOF LATHING MATERIALS
METAL WEATHERSTRIPS
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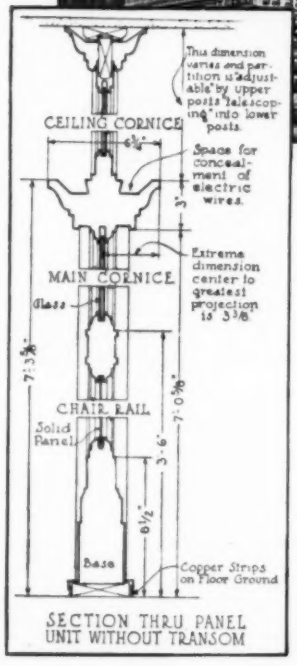
Ceco



SECTION THRU PANEL UNIT WITHOUT TRANSOM

Empire Steel Partitions are 100% Salvageable

That is ONE reason why they were selected for and installed in the gigantic Equitable Building, New York, after careful scrutiny and analysis of every type of partition on the market.

EMPIRE EXTENSIBLE STEEL PARTITIONS, though absolutely rigid when in place, are so simple in construction and so easy to handle that an entire floor can readily be dismantled, re-arranged and re-erected over night, at one-fourth the usual labor cost. Besides this, the office is not smothered with sawdust or broken plaster, there is *no waste*—(because the extensible construction allows every inch to be used over again, under different conditions and with different ceiling heights if desired)—and the contour and finish of the moulding is such as to lend distinction to the most expensively equipped office. The first cost compares favorably with that of wood—the finish may be practically anything you wish.

Write for the full particulars, or see our catalogue in "Sweet's.

EMPIRE STEEL PARTITION CO., Inc.

College Point :-: New York

HUBBELL

"*De Luxe*" OUTLETS for Fine Buildings

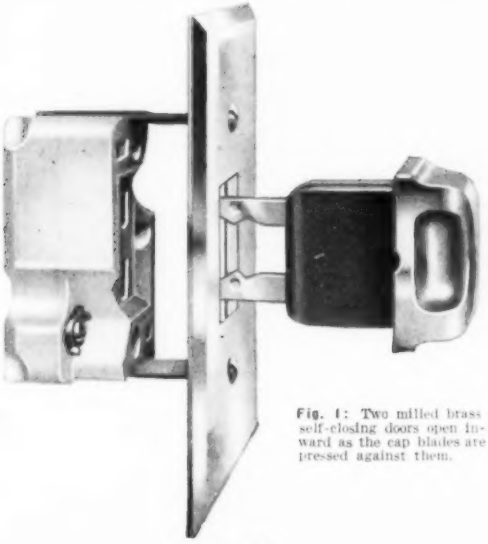
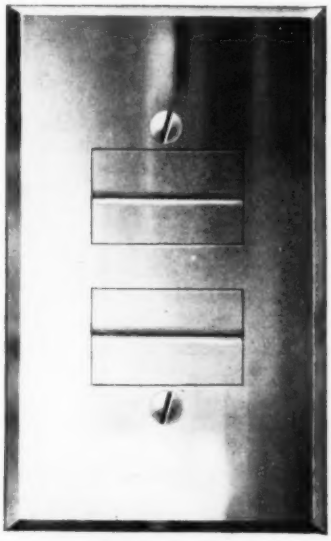


Fig. 1: Two milled brass self-closing doors open inward as the cap blades are pressed against them.



2/3 actual size
Duplex FLUSH DOOR Receptacle No. 6755, with Plate No. 6756—assembled.

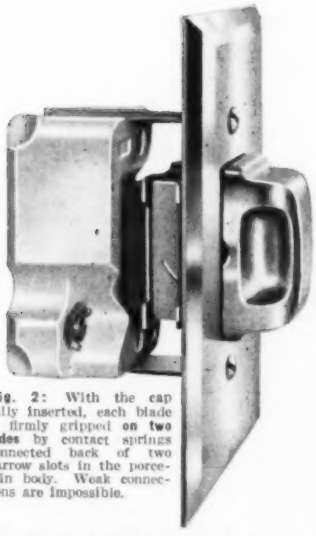


Fig. 2: With the cap fully inserted, each blade is firmly gripped **on two sides** by contact springs connected back of two narrow slots in the porcelain body. Weak connections are impossible.

When the cap is withdrawn, the doors automatically close, flush with the plate.

THIS new electrical outlet for fine buildings has been designed to meet Architect's requirements for a flush reseptacle with the mechanism *wholly concealed from view.*

Electrical contacts can be reached only by the blades of each cap.

These FLUSH DOOR RECEPTACLES are furnished complete with brass-covered or all-composition caps. Brass plates are of standard size, in any finish desired. Receptacle bodies fit standard outlet boxes.

HARVEY HUBBELL INC
ELECTRICAL SPECIALTIES
BRIDGEPORT HUBBELL CONN. U.S.A.

2263-U

A BULLETIN containing full information regarding our Electrical Wiring Devices, is in course of preparation. We will gladly mail a copy free to any architect requesting.

ELECTRICAL SPECIALTIES

Federal Reserve Bank Building, Richmond, Virginia.

Messrs. Sill, Buckler & Fenhagen, Architects, Baltimore.

INDIANA LIMESTONE

Indiana Limestone Contributes to the Architectural Beauty and Stability of the South

The same note of stability and permanence that has always dominated the architecture of the Old South is again evidenced in the recently completed Federal Reserve Bank Building at Richmond, which is constructed of Indiana Limestone.

Here we find emphasized the spirit of progress in the solution of the commercial needs of the new, industrial South.

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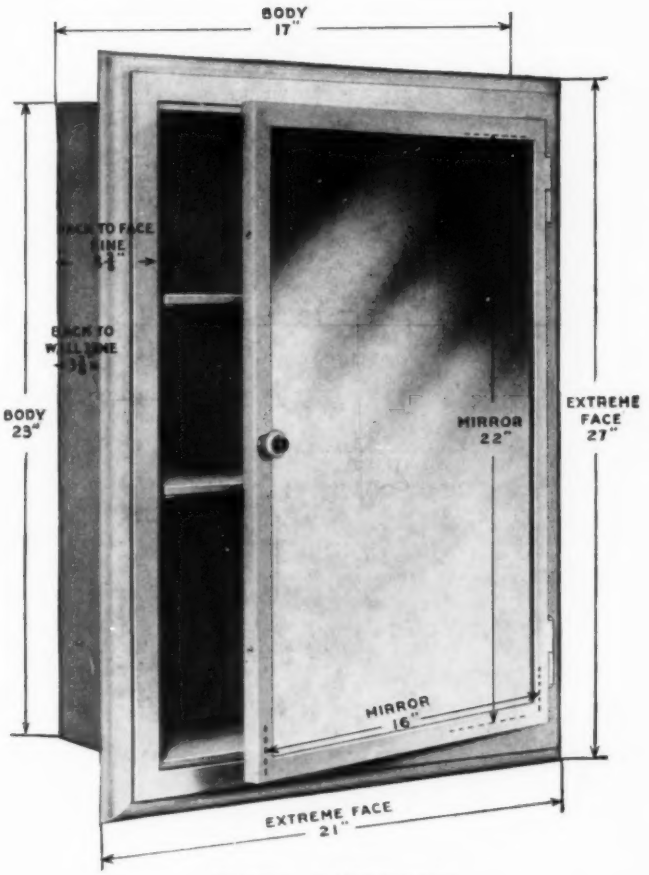
Box 768, Bedford, Indiana

METROPOLITAN SERVICE BUREAU, 622 MARBRIDGE BLDG., NEW YORK CITY

INDIANA LIMESTONE
THE NATION'S BUILDING STONE

The WHITE Brasscrafters

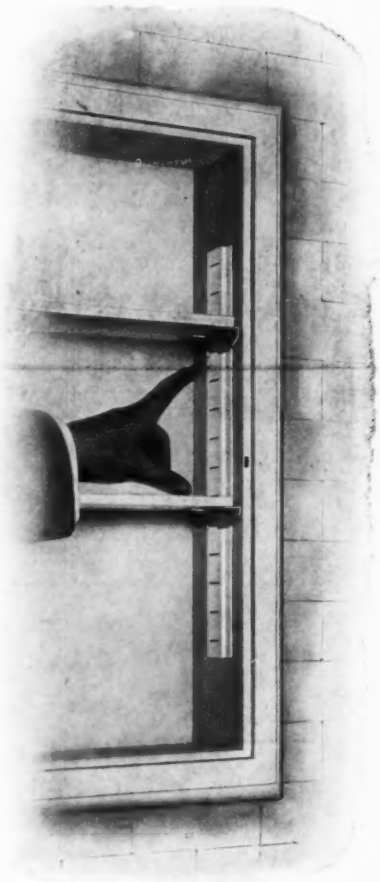
One-Piece Steel Medicine Cabinets



GRAPHIC ILLUSTRATION

Dimensions and roughing measurements.

Extreme of Moulded Edges	21 in. x 27 in.
Body	17 in. x 23 in.
Mirror, without Bevel	16 in. x 22 in.



SECTIONAL CUT

Showing how shelves are fixed, but instantly adjustable.

Wall Line to Face	1 in.
Wall Line to Back	3⅜ in.
Opening Required for Installation	17¼ in. x 23¼ in. x 3⅜ in.

Some of the reasons why more and more architects are specifying The WHITE Brasscrafters cabinets:

The cabinets are made entirely of steel secured from corrosion by application of a process approved by U. S. Government.

The durable finish is the The WHITE Brasscrafters

The shelf rests are securely fixed, but instantly adjustable. (Note sectional cut.)

The two shelves are pure white Vitrolite glass, impervious to acids and chemicals.

The mirror door is plain French plate glass in seamless metal frame, with moisture pad, flush-fitting metal back, china knob in combination with spring catch, concealed hinge flanges, and loose pin for convenience in detaching the door.

The body and moulding are integral, or are made so by oxyacetylene welding, thus securing a cabinet without joints, seams or cracks.

The cabinets require no finishing, either inside or outside, at the building. They are delivered ready for immediate installations, which is completed by using two wood screws in holes provided in the middle of the vertical sides.

Guaranteed satisfaction.

The makers of these cabinets are the makers of the well-known line of The WHITE Brasscrafters Bathroom and Lavatory Accessories.

Send for Hand-Book. *See Sweet's, Page 1466.*

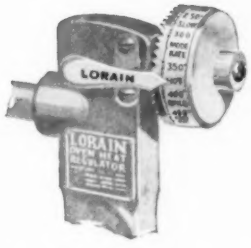
J. P. EUSTIS MANUFACTURING COMPANY

CAMBRIDGE — The TRADE MARK Brasscrafters — BOSTON 39, MASS.

For Every Building Where Food is to be Cooked and Where Gas is Available, *Specify*—

Lorain-equipped Gas Ranges

Only these famous Gas Stoves are equipped with the Lorain
Clark Jewel—Quick Meal—Direct Action—Dangler—New Process—Reliable



One easy turn of the Lorain Red Wheel gives the housewife a choice of 44 measured and controlled oven heats for any kind of oven cooking or baking.

THE Lorain Oven Heat Regulator is the first perfect application of thermostatic control of heat to the oven of the domestic gas range. "Lorain" was invented in the Research Laboratories of the American Stove Company and is sold only as an integral part of gas ranges manufactured by the several divisions of the American Stove Company.

Thousands upon thousands of fine apartments, houses, schools, hospitals and other types of buildings now have kitchens furnished with Lorain-equipped Gas Ranges.

As a labor-saving, time-saving, money-saving device, Lorain eclipses the electric washing machine, the vacuum cleaner, or the kitchen cabinet.

Owners of Gas Ranges equipped with the Lorain Oven Heat Regulator highly praise the device. Many unusual things in the art of cookery are made possible by Lorain—oven canning, whole meal cooking, baking and roasting with unfailing results, and *all* accomplished without attention on the part of the housewife during the cooking process.

For three years the biggest advertising campaign in the history of the stove industry has been spreading the story of "Lorain". Today most women have some knowledge of the device.

Kitchens equipped with these wonderful gas ranges always appeal to women, because Lorain makes cookery the most uncertain and arduous task of the home—a pleasant duty easily performed.

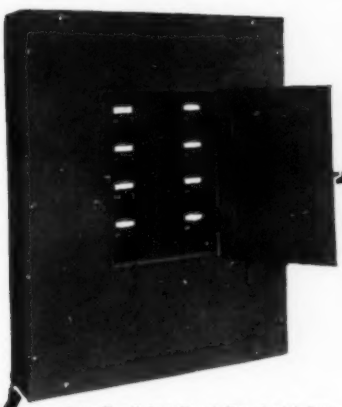
Illustrated catalogs giving complete specifications of Lorain-equipped Gas Ranges, price lists, etc., will be gladly furnished. There are sizes, styles and finishes to meet every requirement.

AMERICAN STOVE COMPANY
Largest makers of Gas Ranges in the World
186 Chouteau Avenue
ST. LOUIS, MO.

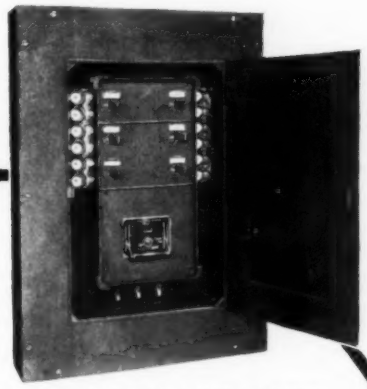
LORAIN
OVEN HEAT REGULATOR

Westinghouse Type T Safety Panel Boards

For the control of lighting circuits in residences, apartment houses, hotels, stores, factories; in fact, wherever a panel board of this character is required.



Type T—Safety Panel Board with Inner Door open, giving access to switches.



Type T—Safety Panel Board with both Inner and Outer Doors open, giving access to plug fuses.

You can now get quick deliveries on Westinghouse Tumbler Switch (Type T) Safety Panels made up to your special designs. A new method for manufacture and assembly makes this desirable service possible.

The essential operating parts of these panels are made at the Westinghouse plant in Brooklyn. This assures the highest grade of product and also low cost due to quantity output.

These parts are then shipped to the various service stations of the Company, which are scattered all over the United States. Local orders are referred to these stations and are there made up from stock parts. In this manner almost any shape, size, and arrangement of panel can be produced without the delay that inevitably takes place when a special job is put through a factory engaged in the quantity manufacture of standard products.

Type T panels are absolutely safe for the operator. Everything reachable is dead so that it is impossible to get a shock when turning lights on or off. They have been approved by the National Board of Fire Underwriters and are proving especially satisfactory for industrial use.

Their material and workmanship are of the Westinghouse high quality; their appearance is pleasing; they are suitable for all panel uses; and their price compares favorably with panels possessing fewer advantages.

Westinghouse Type T Safety Panel Boards are described in detail in Catalogue 12 A.

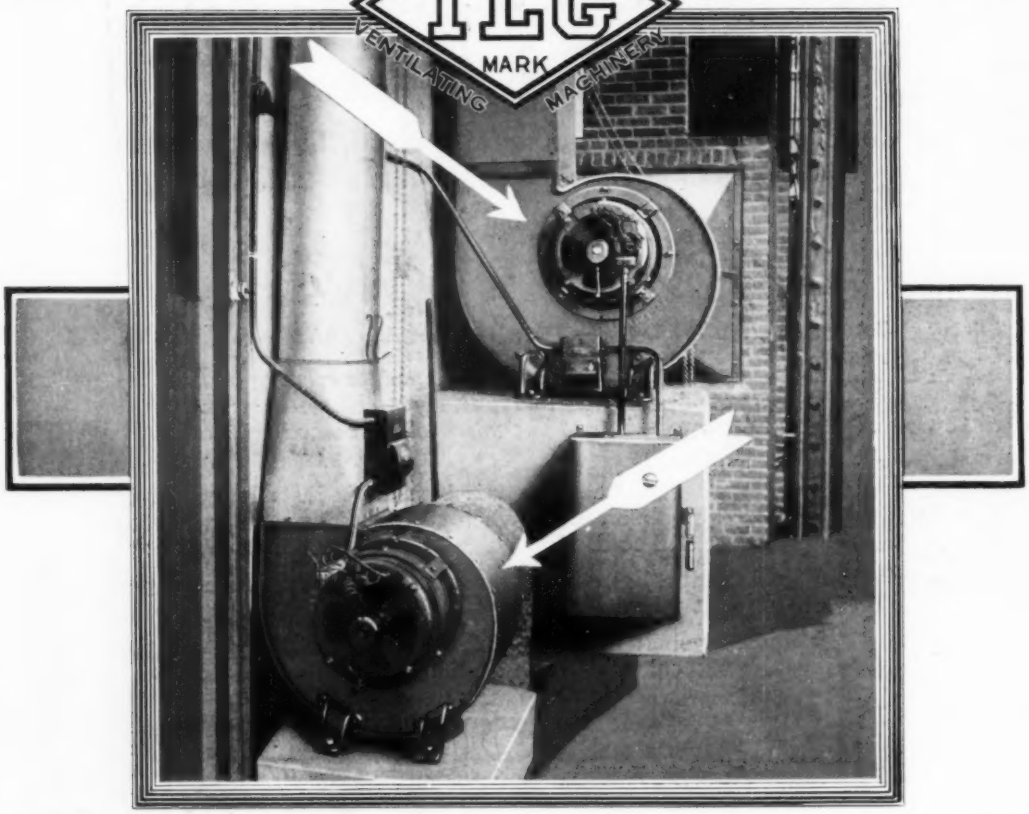
WESTINGHOUSE ELECTRIC

Westinghouse Electric & Manufacturing Company
Krantz Works, 160 Seventh Av., Brooklyn, N. Y.

Westinghouse

SELF-COOLED UNIVERSAL PROPELLER FANS BLOWERS

HIGH EFFICIENCY TRADE ILG MARK VENTILATING MACHINERY



IN mechanical construction *Ilg Blowers* are a real innovation. They possess maximum strength with minimum weight, insuring economical operation. All parts are interchangeable — no pedestal or foundation of any kind is required.

These features, together with central suspension and drive define true economy in power consumption. Your safeguard lies in the fact that we build the complete unit, which gives you a guarantee covering both blower and motor.

All *Ilg Blowers* are equipped with the improved *Ilg* multi-blade wheel. The blades are made of whiting ribbon steel, electrically welded to steel retaining rings, hand forged, wrought iron spider and malleable iron. Central Suspension Hub.

GOOD HEALTH WEEK Oct. 23-30 1922

Architects and engineers will be especially interested in the New Ilg 1922 Catalog—200 pages of diagrams and illustrations — a graphic treatise on Correct Ventilation, containing valuable data on the simple solution of all ventilating problems. Send for it.

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The Residence of Mr. Herbert Hoover

SECRETARY Hoover's California residence is a fitting tribute to the structural possibilities of Medusa White Cement Stucco.

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Medusa Waterproofing in concrete, added as an integral part of the cement, lines the tubes or pores throughout the mass with a water-repellent film that resists dampness *permanently*. Best results can be had by specifying Medusa *Waterproofed* Cements, either White or Gray. *We are sole manufacturers of Waterproofed White Cement.*

Stanford, California, residence of Mr. Herbert Hoover, Secretary of Commerce. Medusa Stainless White Cement was used in the exterior stucco, and on the inside for shower baths, setting tile, etc. Architect, Mr. A. B. Clark of Stanford University, Calif.

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Our new booklets describing Medusa White Cement and Medusa Waterproofing give explicit directions for their use. Profusely illustrated. We shall be pleased to send them, on request

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Have made the stairways in Cincinnati
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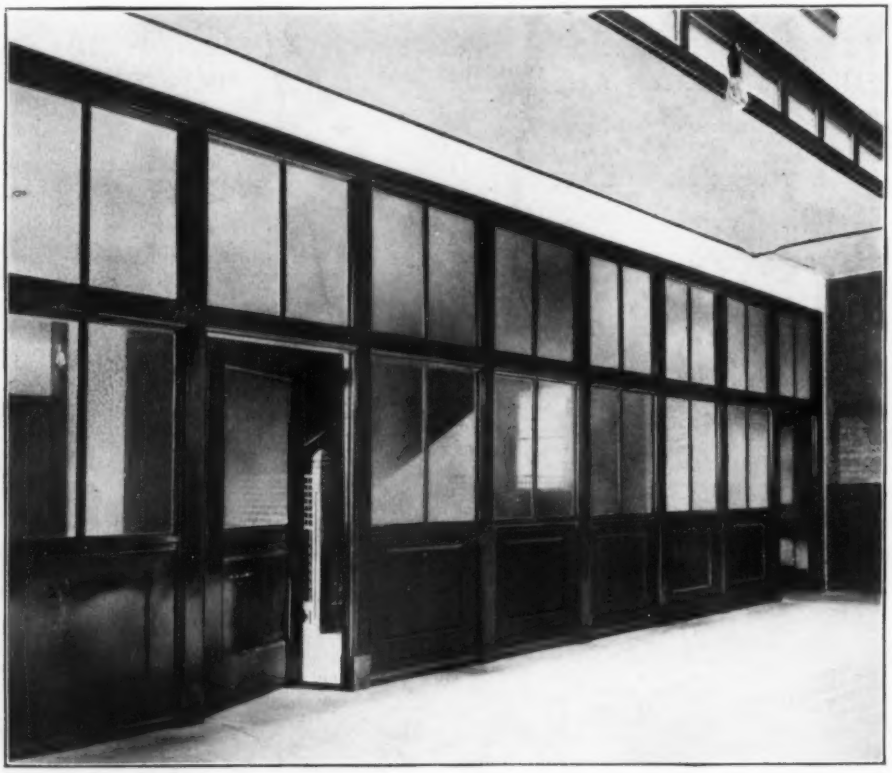

SIX PARTITIONS, LIKE ABOVE, OAK FINISH — GARFIELD SCHOOL

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Thorp Reference Book on Fire Proof Doors to Architects on request.
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